

Chris,

Please see the attached. Thanks

----- Forwarded by Peter Gold/R3/USEPA/US on 08/22/02 02:45 PM -----

"Charp, Paul"
<pac4@cdc.gov>
08/16/02 08:49 AM

To: "Williams, Robert C. (Bob)" <rcw1@cdc.gov>, "Isaacs, Sandr
cc: Tom Stukas/R3/USEPA/US@EPA, Peter Gold/R3/USEPA/US
Subject: Health advisory is NOT warranted

I have returned from the Neutron Products site visit where I met with ATSDR regional staff, EPA, state, and facility representatives. The site is in a rural area with less than 20 houses within a kilometer of the facility. The closest residences are either owned by the facility or are vacant. The EPA is considering listing the site but the Site Assessment Manager does not believe the facility will score high enough to trigger listing the site.

We performed radiological surveys and collected environmental samples around the facility property and off-site areas. ATSDR assisted in the surveys, identification of sampling locations, and collection of samples. The radiation levels 200 yards from the facility are indistinguishable from background; any elevated radiation readings are from the waste stored on site. Per conversations with the state, Neutron Products is under a court order to remove the waste but no action has been taken as yet. The site releases about 6 microcuries of cobalt 60 per year; this is within regulatory limits. Any air releases are in the form of metallic cobalt and the resulting contamination is particulate (hot spots).

In a nutshell, based on observations of population estimates, levels of radiation exposure surrounding the facility (off-site), and no uniform off-site contamination, I do not believe the current site conditions pose any threat to human health. No off-site soil contamination was found that exceeded the DHAC soil screening criteria; in fact no contaminated areas were found off-site.

If you would like a more detailed report, please let me know.

Thank you

Paul A. Charp, Ph.D.
Senior Health Physicist
Division of Health Assessment and Consultation
CDC/ATSDR
1600 Clifton Road E 56
Atlanta, Georgia 30333
404 498 0365
404 498 0063 (fax)



Cristina
Fernandez/R3/USEPA/US
04/05/2007 11:16 AM

To Christine Wagner/R3/USEPA/US@EPA
cc
bcc
Subject More on Neutron Products

Hi Chris,

I just wanted to let you know that Jed Harrison is the Director of the Las Vegas Lab. I sent him a message to clarify things. Apparently, David Musick made a big deal out of your conversation with him and he was even getting ready to send their mobile lab to the site!

Anyway, I think Greg Dempsey has very good suggestions and he could be very helpful. He suggested, we should start with a conference call, so we all come to the same page and then go from there. He also said that we might need to be careful when we start asking around about what to do with these sources because he says this is a small community and Neutron Products might not like to hear that EPA is already planning on what to do when they shut down and also the message that it sends to the other companies. He recommended we ask our attorney how to go about this in a confidential way.


Whenever, you get a chance, give me a call and I'll give you some other details that Greg mentioned.

Also, let me know, if a conference call works for you and when would you like to have it.

Cristina

Cristina Fernandez, Radiation Program Manager
Air Protection Division
Energy, Radiation & Indoor Environment Branch (3AP23)
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2023
Work: (215) 814-2178
Fax: (215) 814-2124

Gregg
Dempsey/LV/USEPA/US
04/05/2007 11:44 AM

To Christine Wagner/R3/USEPA/US@EPA
cc Cristina Fernandez/R3/USEPA/US@EPA
bcc
Subject Re: Neutron Products 

Thanks for the note, Chris. Excuse all our notes back to you as enthusiasm to help. We'll get a point of contact clarified this morning and someone will get back to you.

Step number 1 when you inherit the site would be to hire a 24 hour guard and a high end radiological consultant to manage the pools until a decision is made what to do with the sources. There are people out in the industry who can do this, and I think there would be a number of good consultant companies near Philly that can help you. You might sub it out of your region's ERRS contract, but no way let them do it themselves.

We'll have to be really careful about talking to other companies about taking the sources while NP is still in operation. The irradiator industry is small and somewhat incestuous. I think if we spoke to a competitor or AECL it would get back to the owner of NP very fast. Unfortunately, NP's reputation is well known. When I was speaking with my colleague in Mississippi the other day about his experiences in the Columbus, MS irradiator facility shut-down, he asked me why I was asking, and I told him that our Philadelphia office might inherit an irradiator in Maryland. He said "ohhhhh, Neutron Products, huh?" which to me said it all. He went on to tell me the story we all know about the owner and his attempts to keep the business alive. If a state regulator in Mississippi knows about the place, that's not so good. We might want to also involve one of your staff attorneys in the meetings to find out how we can make inquiries and be somewhat assured that questions and answers will be kept in confidence.


Preparedness planning is a good thing, and I'm sorry about the bumpiness in our response back to you. We'd certainly be happy to host a meeting when you decide or perhaps come visit you.

Gregg Dempsey
Senior Science Advisor
U.S. Environmental Protection Agency
Radiation and Indoor Environments National Laboratory
Las Vegas, Nevada

dempsey.gregg@epa.gov
(702) 784-8232 office
(702) 784-8231 facsimile

Christine Wagner/R3/USEPA/US

Christine
Wagner/R3/USEPA/US
04/04/2007 05:11 PM

To Gregg Dempsey/LV/USEPA/US@EPA
cc
Subject Re: Neutron Products 

Hi Gregg

Thank you for the comments and support. I remember that last time I saw you, we had discussed working on the contingency plan. However, I have never formalized such a plan and I wanted to start working on it

I would like to convene a meeting with a few people to get the process started. In particular, I am concerned about keeping the pools going if the facility shuts down

Since I was out your way, David and I had a purely non-official discussion about the Site. I apologize if I have broken any protocols. Our meeting was entirely coincidental

I did point out to him that I want to follow any official protocol for requesting RERT support

I also recently received a message from Manny on this same topic.

Bottom line is that I would like to have a 1-day meeting with you and David Kappelman at a minimum. To me, the location is irrelevant. I can come to LV, Montgomery, or you can come east. There is a Superfund account number

Let me know if you can assist and if so, what should be my next step

There is nothing new there, but I want to be as prepared as possible

Thank you

Chris

Gregg Dempsey

----- Original Message -----

From: Gregg Dempsey
Sent: 04/03/2007 07:29 PM
To: Christine Wagner
Cc: Cristina Fernandez; David Musick
Subject: Neutron Products

Predecisional Comments - For Official Use Only.

Chris:

A few weeks ago, EPA held a Federal Facilities Meeting here in Las Vegas. We gave a presentation to the group on the Radiological Emergency Response Team (RERT) and did some outside demonstrations. An attorney from your region was here and asked me a lot of questions about Neutron Products. He said the region was trying to come up with a plan what to do *if and when* Neutron Products went under. I made several suggestions.

David Musick from our laboratory talked with you recently as well. He said you all were working on a contingency plan about NP.

I did a little research to help you come up with a contingency plan. The biggest problem, of course, will be to get rid of the cobalt-60 sources in the facility. I made a call to a state regulator colleague in Mississippi who closed an irradiator facility in Columbus, MS about 2 years ago. This facility went bankrupt. They made a deal with Atomic Energy of Canada, Limited (AECL) to come in and collect the cobalt-60 sources and take them to Canada. It was about a half a million curies of material. AECL has a stellar reputation and handled removal and transportation safely. AECL would remanufacture the Co-60 sources into new materials, in essence recycling them.

The other options are to get the sources to people still in the irradiator business. One is a company called Graystar. They make a "Genesis Irradiator" and they're in New Jersey. There's also a company in Ottawa, Ontario called Nordion that does the same thing. If the sources are in good enough shape and are not too far decayed, they might reuse them.

When and if the time comes, we might be able to get one of the companies to do the removal and

transportation if we give them the sources. I think that's a decent contingency plan as a first step.

The other thing I'd suggest is planning on waiting. Since cobalt-60 has a five year half life, if we end up taking possession of the property and hold it for 5 years, half of our radiation problem goes away. Given how long it takes to work out some of our sites, this might also have some viability.

I'm happy to help you further on this, if you'd like.

Gregg Dempsey
Senior Science Advisor
U.S. Environmental Protection Agency
Radiation and Indoor Environments National Laboratory
Las Vegas, Nevada

dempsey.gregg@epa.gov
(702) 784-8232 office
(702) 784-8231 facsimile

[attachment "NRC Fact Sheet on Commercial Irradiators.pdf" deleted by Christine Wagner/R3/USEPA/US]



Lorie Baker/R3/USEPA/US

05/08/2007 08:04 AM


To howland.charles@epa.gov, Christine
Wagner/R3/USEPA/US@EPA

cc

bcc

Subject Fw: Neutron Products Legal Issues

History:

 This message has been replied to.

Not sure who this guy is, just emailed me out of the blue. Should I direct him to MDE's attorney, whose name I don't remember?

----- Forwarded by Lorie Baker/R3/USEPA/US on 05/08/2007 08:01 AM -----



"

<

05/06/2007 09:00 PM

To Lorie Baker/R3/USEPA/US@EPA

cc

Subject Neutron Products Legal Issues

Hello Lorie;

I know this issue is probably not relevant to you; however maybe you can point me in the right direction of who to talk to.


In the late 1980's Neutron filed Bankruptcy protection, withheld employees payroll & Retirement payments and then gave the employees debentures to cover the funds that they did not pay the employees.


I know that there is legal action pending that requires Neutron to sell off property to fund specific activities related to MDE lawsuit & contamination issues.

I want to make sure that the appropriate governing agencies know of the debentures that the employees have in the event the sale of these properties should be used to pay back the employees.

Who should I inform of this issue?

Thanks for any assistance you can offer.

 Christine
Wagner/R3/USEPA/US
05/08/2007 10:22 PM

To Lorie Baker/R3/USEPA/US@EPA
cc
bcc
Subject Re: Neutron Products Legal Issues 

Lorie

Sorry for the late reply. I have been on the road and didn't get your message till just now.

I would agree with CH that we have him contact MDE who is the governing body

Call me if you wish to discuss
804-337-3049

Thanks
Chris

Lorie Baker
----- Original Message -----

From: Lorie Baker
Sent: 05/08/2007 08:04 AM
To: howland.charles@epa.gov; Christine Wagner
Subject: Fw: Neutron Products Legal Issues

Not sure who this guy is, just emailed me out of the blue. Should I direct him to MDE's attorney, whose name I don't remember?

----- Forwarded by Lorie Baker/R3/USEPA/US on 05/08/2007 08:01 AM -----



05/06/2007 09:00 PM

To Lorie Baker/R3/USEPA/US@EPA
cc
Subject Neutron Products Legal Issues

Hello Lorie;

I know this issue is probably not relevant to you; however maybe you can point me in the right direction of who to talk to.

In the late 1980's Neutron filed Bankruptcy protection, withheld employees payroll & Retirement payments and then gave the employees debentures to cover the funds that they did not pay the employees.

I know that there is legal action pending that requires Neutron to sell off property to fund specific activities related to MDE lawsuit & contamination issues.

I want to make sure that the appropriate governing agencies know of the debentures that the employees have in the event the sale of these properties should be used to pay back the

employees.

Who should I inform of this issue?

Thanks for any assistance you can offer.



Cristina
Fernandez/R3/USEPA/US
04/05/2007 11:05 AM

To Jed Harrison/LV/USEPA/US@EPA
cc Christine Wagner/R3/USEPA/US@EPA
bcc
Subject Fw: Neutron Products

Hi Jed,

How are you? I just left you a long voice message, but I figured an e-mail message would be good as well.

I spoke with Chris Wagner, the OSC in charge of the Neutron Products site, and we would like to clarify that this is not an emergency. Chris has been supervising this site for years and it continues to be in operation. Based on her knowledge, she anticipates this company might stop operating within the next year or two, and to be prepared, she would like to come up with a contingency plan of what we will do once this company shuts down.

Chris is simply planning ahead, so we can be ready and this site doesn't turn into an emergency whenever it shuts down. For this reason, we would like to arrange a meeting with some of your staff to start working on a contingency plan. Chris Wagner has been working with David Kappleman from the Montgomery lab, but we would also like to have Greg Dempsey's expertise in the planning process.

The next step from here will be to arrange a conference call, where we can talk about the site and what are the issues, expectations and suggestions to draft a contingency plan. Based on the results of this conference call, we will decide if we should have a meeting in person. Chris Wagner and I are willing to travel to Las Vegas, if necessary.

Again, I just wanted to clarify any misunderstandings that might had occurred from informal conversations, and also ask you to advice me on how should we request for help in the future.

Thank you, Cristina

Cristina Fernandez, Radiation Program Manager
Air Protection Division
Energy, Radiation & Indoor Environment Branch (3AP23)
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2023
Work: (215) 814-2178
Fax: (215) 814-2124

----- Forwarded by Cristina Fernandez/R3/USEPA/US on 04/05/2007 10:38 AM -----

Gregg
Dempsey/LV/USEPA/US
04/03/2007 07:29 PM

To Christine Wagner/R3/USEPA/US@EPA
cc Cristina Fernandez/R3/USEPA/US@EPA, David
Musick/LV/USEPA/US@EPA
Subject Neutron Products

Predecisional Comments - For Official Use Only.

Chris:

A few weeks ago, EPA held a Federal Facilities Meeting here in Las Vegas. We gave a presentation to

the group on the Radiological Emergency Response Team (RERT) and did some outside demonstrations. An attorney from your region was here and asked me a lot of questions about Neutron Products. He said the region was trying to come up with a plan what to do *if and when* Neutron Products went under. I made several suggestions.

David Musick from our laboratory talked with you recently as well. He said you all were working on a contingency plan about NP.

I did a little research to help you come up with a contingency plan. The biggest problem, of course, will be to get rid of the cobalt-60 sources in the facility. I made a call to a state regulator colleague in Mississippi who closed an irradiator facility in Columbus, MS about 2 years ago. This facility went bankrupt. They made a deal with Atomic Energy of Canada, Limited (AECL) to come in and collect the cobalt-60 sources and take them to Canada. It was about a half a million curies of material. AECL has a stellar reputation and handled removal and transportation safely. AECL would remanufacture the Co-60 sources into new materials, in essence recycling them.

The other options are to get the sources to people still in the irradiator business. One is a company called Graystar. They make a "Genesis Irradiator" and they're in New Jersey. There's also a company in Ottawa, Ontario called Nordion that does the same thing. If the sources are in good enough shape and are not too far decayed, they might reuse them.

When and if the time comes, we might be able to get one of the companies to do the removal and transportation if we give them the sources. I think that's a decent contingency plan as a first step.

The other thing I'd suggest is planning on waiting. Since cobalt-60 has a five year half life, if we end up taking possession of the property and hold it for 5 years, half of our radiation problem goes away. Given how long it takes to work out some of our sites, this might also have some viability.

I'm happy to help you further on this, if you'd like.

Gregg Dempsey
Senior Science Advisor
U.S. Environmental Protection Agency
Radiation and Indoor Environments National Laboratory
Las Vegas, Nevada

dempsey.gregg@epa.gov
(702) 784-8232 office
(702) 784-8231 facsimile



NRC Fact Sheet on Commercial Irradiators.pdf



Fact Sheet

United States Nuclear Regulatory Commission
Office of Public Affairs
Washington DC 20555
Telephone: 301/415-8200 E-mail: opa@nrc.gov

Commercial Irradiators

Background

Irradiators are facilities that expose products such as food, food containers, spices, medical supplies and wood flooring to radiation to eliminate harmful bacteria, germs and insects or for hardening or other purposes. The gamma radiation does not leave any radioactive residue or cause any of the treated products to become radioactive themselves. The source of that radiation can be radioactive materials, an X-Ray tube or an electron beam.

The NRC and "Agreement States" regulate those irradiators using a radioactive source, typically cobalt-60. With some exceptions, the NRC does not specify the types of products that may be irradiated nor does it have a position on the irradiation of food. The U.S. Food and Drug Administration and other agencies have approved the irradiation of meat and poultry, as well as other foods, including fresh fruits and vegetables.

There are generally two types of irradiators which use radioactive material in operation in the United States: underwater and wet-source-storage panoramic models. In the case of underwater irradiators (Figure 1), the sealed sources that provide the radiation remain in the water at all times, providing shielding for workers and the public. The product to be irradiated is placed in a water-tight container, lowered into the pool, irradiated and then removed.

With wet-source-storage panoramic irradiators (Figure 2), the radioactive sealed sources are also stored in the water, but they are raised into the air to irradiate products that are automatically moved into the room via a conveyor system, then lowered back to the bottom of the pool. For this type of irradiator, thick concrete walls or steel provide protection for workers and the public when the sources are lifted from the pool.

To avoid worker overexposure to radiation, the sealed sources used in all irradiators must be carefully controlled and handled at all times. All of the U.S. commercial irradiators regulated by the NRC currently use cobalt-60. The amount of the material in the devices can range up to 10 million curies, with most large commercial irradiators using more than 1 million curies of radioactive material.

Irradiators have been in use in this country for about 40 years. There are approximately 50 commercial irradiators nationwide that are licensed by the NRC and "Agreement States," which are states that have entered into an agreement with the NRC that permits them to regulate, within their borders, most radioactive materials that would otherwise be overseen by the NRC. Currently, there are 33 "Agreement States."

Safety Reviews and Requirements

With proper design and operating procedures, commercial irradiators can be operated safely and without posing any significant radiation risk to workers or the public. Indeed in most cases the radiation exposure to workers is so low that it cannot be detected or distinguished from natural background levels of radiation. Because of the significant structures built to shield these operations, members of the public in the vicinity of an irradiation facility receive little, if any, radiation exposure from the irradiation sources.

Licensing and Inspection

Under the Atomic Energy Act of 1954, all irradiators using radioactive material must be licensed and meet all applicable safety requirements. Among the requirements:

- A license must be obtained from the NRC or an "Agreement State" prior to beginning construction of a new irradiator.
- Design and performance criteria must be met for irradiator facilities and the sealed sources used in them.
- Irradiator facilities must undergo construction monitoring and acceptance testing.
- The operation of an irradiator must adhere to regulations pertaining to such areas as worker training, operating and emergency procedures, and inspection and maintenance.

When reviewing an irradiator application, the NRC assesses the integrity of the sources to be used, the design of the safety systems, the training and experience of personnel, and the facility's radiation safety program. The NRC conducts periodic inspections -- usually every other year -- to ensure compliance with agency regulations. If a facility is not in compliance, the NRC can take appropriate enforcement action, up to and including revocation of its license.

Accidents and Contamination Events

There have been no fatalities resulting from overexposure to radiation from irradiators in the United States. However, there have been two serious radiation-related injuries at irradiation facilities in the U.S. The first overexposure occurred in June 1974 in Parsippany, N.J., when an irradiator operator walked into a room containing an exposed source, saw it and quickly left. He received a dose large enough to cause clinically observable symptoms of radiation sickness, but the dose was not large enough to be fatal. The entrance to the room lacked the modern automatic access control systems now used, plus an alarm system had been turned off.

The other event occurred in September 1977 in Rockaway, N.J., when an operator entered an irradiation chamber following a shift change while a source was unshielded. This occurred because the facility management had decided to allow the source to be raised with both interlock and safety devices inoperable. Like the worker involved in the earlier event, he received a dose large enough to cause clinically observable symptoms of radiation sickness, but the dose was not large enough to be fatal.

Worldwide, there have been five fatalities in other countries, specifically El Salvador, Italy, Norway, Israel and Belarus. Most, if not all, of the occupational worker deaths or serious overexposures occurred because safety systems were intentionally bypassed or procedures were not followed. Although there have been no radiation-related deaths at irradiators in the U.S., two deaths occurred when individuals were trying to move materials to be irradiated on a conveyor and were crushed. The radiation-related deaths in other countries involved individuals who ignored safety features built into the systems.

There have been no irradiator events in the United States that resulted in groundwater contamination, but there have been two instances of soil contamination. One occurred in 1988 in Decatur, Ga., due to a leaking irradiator source utilizing cesium-137 in the form of cesium chloride, which is highly soluble and similar to ordinary table salt. The leakage caused significant contamination of the facility and some contamination of the soil surrounding the building. Extensive cleanup work was required, at considerable expense to the facility's operator as well as the U.S. Department of Energy, which had supplied the source. However, there was no exposure to members of the public.

Another event occurred in Dover, N.J., in 1982. That situation involved a damaged cobalt-60 source and resulted in the contamination of water that was released to the facility floor and soil immediately surrounding the facility. As in the Georgia event, an extensive cleanup was required, but there was no groundwater contamination or exposures to members of the public.

The NRC has, over the years, reviewed the causes of various incidents at irradiator facilities. In response, it has developed a set of very prescriptive regulations to ensure that irradiator facilities include safety features and redundancies to minimize the possibility of radiation exposures for workers and members of the public. These regulations are embodied in a portion of NRC regulations that was implemented in 1993 and is known as 10 CFR (Code of Federal Regulations) Part 36.

Shipment and Disposal of Radioactive Sources

Radioactive source suppliers are required to ensure that shipping packages containing sources are sufficiently robust and meet all applicable NRC standards. They must also transport radioactive materials in accordance with U.S. Department of Transportation regulations.

The sources are typically returned to the supplier once their radioactivity levels have dropped to the point where they can no longer efficiently irradiate product material. Again, NRC and Department of Transportation requirements on the shipment of such materials must be met when they are returned to suppliers.

Security of Radioactive Sources

The NRC recognizes the public's concern about a possible terrorist attack on an irradiator facility. Although there have been no specific credible threats against any U.S. nuclear facilities, the NRC required, via orders, increased security measures at irradiation facilities in response to the 9/11/01 attacks.

Following the issuance of an irradiator license, the NRC issues an order to the facility's owner requiring that certain very specific actions be taken to enhance security of the irradiator and its sources. Those security measures must be in place before radioactive sources are loaded into the irradiator. While there has been concern expressed about the possibility of a terrorist obtaining a radioactive source and using it to build a so-called "dirty bomb," the NRC has considered a number of scenarios and preliminarily determined that it would be extremely difficult for someone to explode a cobalt-60 source in a way that could cause widespread contamination.

Emergency Procedures

The NRC requires that irradiator operators have emergency procedures that include coordination with local and state emergency response agencies. Companies that operate irradiation facilities are required to have emergency procedures for a variety of emergencies, including leaking sources, low water or leakage from the storage pool and fires. No license for operation is issued unless satisfactory emergency procedures have been developed.

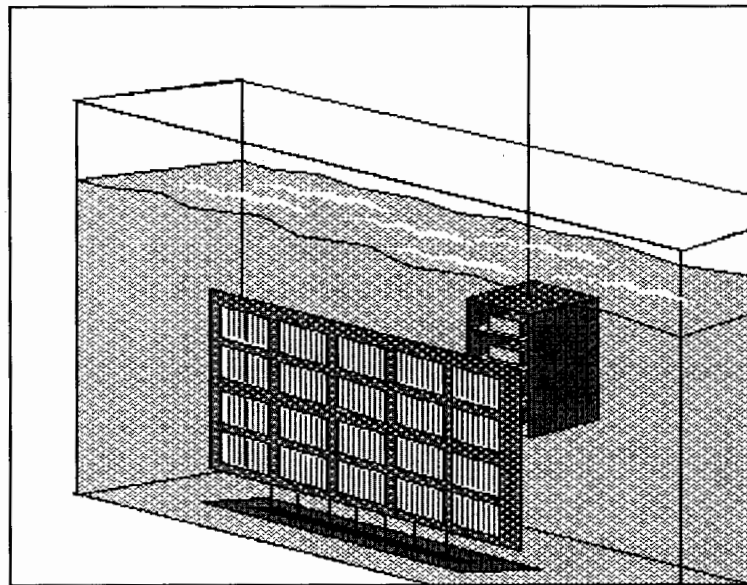
Decommissioning

As with other facilities licensed by the NRC and "Agreement States" to use nuclear materials, irradiation facilities are required to properly clean up the site once they are permanently shut down. At that time, any remaining radioactive sources must be safely disposed of and any residual contamination above acceptable levels must be removed. Confirmatory surveys must be conducted to ensure that the decommissioning work is consistent with applicable safety and health standards.

In September 2003, the NRC announced that it was amending its regulations to require companies that use substantial amounts of nuclear materials to increase the amount of financial assurance provided to cover decommissioning costs. The change was designed to bring the amount of financial assurance required more in line with current decommissioning costs and provide adequate assurance that timely decommissioning can be carried out.

Under that change, many large irradiation facilities that previously used specific dollar amounts in the NRC's regulations as the basis for financial assurance for decommissioning are required to base their funding on site-specific decommissioning cost estimates. The revisions did not alter the approved methods of providing such financial assurance. They are: prepayment; a surety (in the form of a bond, letter of credit or line of credit), insurance or other guarantee method, such as a parent company guarantee if that company meets certain financial tests; or an external sinking fund in which deposits are made at least annually, coupled with a surety method or insurance.

April 2004

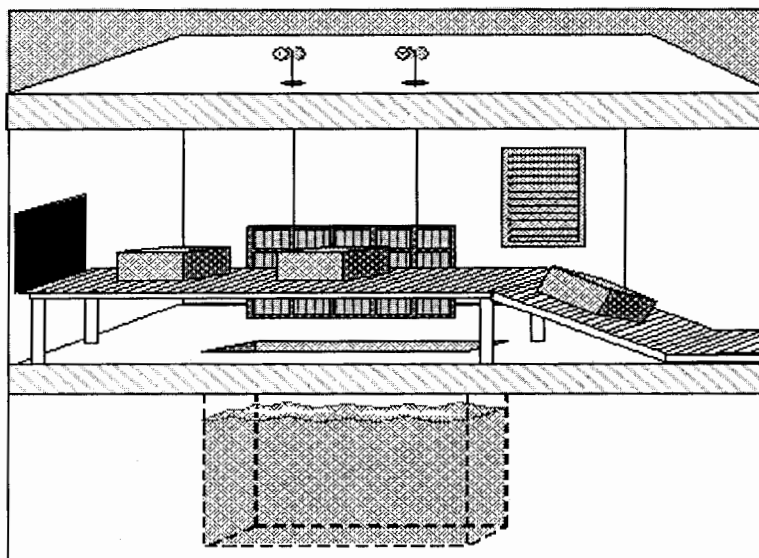


62_plt_5268_512b
111797

Figure 1
Irradiator. *The*

sources remain in the water at all times. The product to be irradiated is placed in a water-tight container and lowered into the water.

Underwater
sealed



62_plt_5268_513c
111797

Figure 2

Wet-Source-Storage Irradiator. *The sealed sources are stored in water and raised into the air*

Commercial

to irradiate a product that may be moved into the irradiation room on a conveyor system. This is an example of a panoramic wet-source-storage irradiator.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103

Office of Regional Counsel

Charles B. Howland
(215) 814-2645
FAX: (215) 814-2603
Email: howland.charles@epamail.epa.gov

May 3, 2004

Jackson A. Ransohoff
President
Neutron Products, Inc.
22301 Mt. Ephraim Rd.
P.O. Box 68
Dickerson, MD 20842

Re: EPA Report regarding Neutron Products

Dear Mr. Ransohoff,

Per your request, enclosed please find a copy of EPA's December 27, 2002 CERCLA POLREP (report of field activities) regarding EPA's activities at Neutron Products' Dickerson facility. On Scene Coordinator Christine Wagner advises that this is the only POLREP that has been prepared for the site.

Please call me if you have any further questions.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Charles B. Howland", is written over the typed name.

Charles B. Howland
Sr. Asst. Regional Counsel

cc: R. Sweeney/M. Zimmeramn, Maryland Department of Environment
John Darnell, Office of Honorable Roscoe Bartlett
Christine Wagner

POLREP #1

Neutron Products, Inc. Facility
22301 Mt. Ephram Road
Dickerson, Montgomery County, MD 20842
Event: CERCLA Removal Assessment
GPS N39°13.207'
W77°25.307'

Attn: RRC, C. Kleeman, S. Minnick, D. Matlock, L. Baker, C. Howland, C. Deitzel, D. Sternburg, M. Burke

I. Situation (December 27, 2002)

A. This Polrep covers EPA activities performed by the Removal Response Section of EPA from April, 2002 through December, 2002.

B. The Neutron Products, Inc. facility is an operational facility which formerly produced and uses Cobalt 60 (^{60}Co), a radioactive isotope. ^{60}Co is used primarily in the radionuclide teletherapy industry as a treatment for cancer. ^{60}Co is produced in nuclear reactors by the irradiation of neutrons of the common stable form of ^{59}Co . The half-life of ^{60}Co is 5.26 years.

C. The Neutron Products Facility is licensed by the State of Maryland. The State of Maryland is an "Agreement State", meaning that the licensing authority of the Nuclear Regulatory Commission has been delegated to the State under the Atomic Energy Act of 1954.

D. Neutron Products, Inc. formerly had four licenses for operations involving radioactive materials. License 01 was for the manufacturing of ^{60}Co . License 03 pertains to ^{60}Co source exchange. Licenses 04 and 05 are for irradiation of manufactured goods.

E. In November of 2000, the Circuit Court of Montgomery County, MD ordered a permanent injunction against Neutron Products for the operations under the 01 License for the inability to secure financial assurance. Irradiation activities under the 04 and 05 licenses continue.

F. On April 23, 2002, MDE sent a letter to EPA requesting a removal assessment be performed at the facility.

G. This polrep documents the activities ongoing as part of the removal assessment. The EPA team on the Site is as follows:

Fund-lead OSC: Chris Wagner
Enforcement-lead OSC: Dennis Matlock
Site Assessment Manager: Lorie Baker
Office of Regional Counsel: Charlie Howland
Community Involvement Coordinator: Carrie Deitzel

Radiation Advisor: Sherri Minnick
ATSDR: Bucky Walters
Congressional Liaison: Mike Burke

II. Actions Taken

A. The facility is located in a sparsely populated area on Mt. Ephram Road near State Route 28 in Dickerson, Maryland. The facility is approximately 6 acres in size and includes the manufacturing facility, office space, an enclosed courtyard area, and an enclosed runoff area. Approximately 4 families live within 100 yards of the facility. The residence immediately adjacent to the facility is owned by Neutron Products Inc., and is not used as a residence nor is included as one of the 4 residences. All residents use private drinking water wells. MDE and Neutron Products, Inc. regularly perform radiation monitoring on the residents' property. Additionally, Neutron Products, Inc. maintains dosimeters (cumulative radiation exposure) on these four homes. A MARC train station is located next to the facility. A CSX rail line also runs behind the facility. The entire facility is enclosed with a chain-link fence which is monitored electronically. The facility is manned approximately 10-12 hours per day, 5-6 days per week. There is not 24-hour security at the facility.

B. During the period of June until August 2002, EPA had several meetings with MDE and the president of Neutron Products, Inc. MDE is concerned about the fate of the materials used in the 01 License now that the manufacturing process has been ordered to cease. Neutron Products, Inc. has missed several waste shipments and has not taken any action to remove or dispose materials from the 01 area since the injunction. Neutron Products, Inc. is still operating their irradiators and maintain personnel on scene for Site maintenance and monitoring. MDE reports a long history of non-compliance with this facility. Neutron Products, Inc. continues to pursue legal recourse for the operation of the manufacturing process. MDE and Neutron Products, Inc. strongly disagree with the amount of financial assurance needed for the facility.

C. In August of 2002, EPA performed a sampling assessment with the assistance of EPA's Office of Radiation and Indoor Air (EPA-ORIA) of Montgomery, Alabama. ATSDR also assisted. The assessment was an integrated removal/remedial assessment. Site Assessment Manager Lorie Baker was also on scene. The president of Neutron Products, Inc. granted access to EPA. EPA collected surface soil samples from both on and off the property. Samples were split with Neutron Products, Inc. personnel.

D. Real-time monitoring was performed using a micro-Roentgen meter to measure gamma radiation. ^{60}Co is a gamma-emitter. Background radiation is approximately 8-10 $\mu\text{R/hr}$. Readings in the immediate neighborhood were in the range of 10-30 $\mu\text{R/hr}$. These are instantaneous readings and are a "monitoring" reading rather than an indication of "exposure". These readings are believed to be due to the waste stored on Site in the courtyard area. ^{60}Co emits two high-energy gamma-rays, resulting in phenomenon known as "sky-shine". As part of the licensing requirement, Neutron Products, Inc. is required to

maintain dosimeters on the 4 homes in the immediate area. Under the license, the dosimeters are not to exceed 100 mr/year. EPA was shown data by Neutron Products, Inc. that shows that this reading was not exceeded for the past several years.

E. The results of the sampling effort were received by EPA in November of 2002. The sampling showed some contamination consistent with MDE past sampling efforts, but did not indicate any levels of contamination in the residential area which would prompt an immediate emergency response action by EPA. Offsite contamination was primarily subsurface soil contamination along an old railroad siding, now covered with vegetation, which is contributed to past actions at the facility. However, MDE records show historical events where contamination was carried off the property. MDE's prompt enforcement actions minimized these events from occurring.

F. Sampling performed by MDE has never shown any contamination of groundwater. EPA did not perform any groundwater sampling.

G. On August 8, 2002, OSC Wagner met with several members of the Dickerson Community Group. EPA will coordinate any future actions with this group. CIC Carrie Deitzel will assist with these efforts.

H. On August 12, OSC Wagner and EPA Radiation Advisor met with the Montgomery County Department of Health. They have not been actively involved with the facility, but would like to be kept updated. The Department of Health has no special jurisdiction over this facility.

I. On November 14, 2002, OSC Wagner met with emergency services personnel from Montgomery County to discuss pre-planning for terrorism events. Montgomery County agreed to work with EPA on creating a counter-terrorism plan for this facility. The Montgomery County Fire & Rescue Dept. indicated that they have always had cooperation from this facility in the past.

J. On November 15, 2002, EPA met with MDE regarding future actions at the facility. EPA and MDE agreed that additional information was needed from Neutron Products, Inc. regarding their future plans and their continued ability to operate in the absence of manufacturing operations.

K. The president of Neutron Products, Inc. has requested that he be included on all meetings between EPA and MDE which pertain to this facility.

L. The facility is being evaluated for possible future consideration for the National Priorities List.

III. Future Plans

- A. An information request pursuant to CERCLA 104(e) is being prepared to send to the facility owner.
- B. EPA to continue to work on pre-planning efforts with MDE and Montgomery County.
- C. Removal assessment to continue to determine future needs and resources.
- D. In the event the facility should become abandoned, EPA will prepare to take the immediate necessary actions.
- E. EPA to coordinate actions with DOE for possible technical assistance.
- F. All actions will be coordinated with the EPA Radiological Emergency Response Plan.

Chris Wagner, OSC
EPA Region III
Richmond, VA

NEUTRON PRODUCTS, INC.

22301 Mt. Ephraim Road, P.O. Box 68
Dickerson, MD 20842
301-349-5001 FAX: 301-349-2433

FAX LEAD PAGE

COMPANY:

US EPA



TO:

CHRIS WAGNER

(Provide copy to: _____)

FROM:

J. A. RANSOFF

SUBJECT/
MESSAGE:

804-448-5404

If FAX is incomplete or illegible, please contact us at 301-349-5001

0152143254 2/04

ALARA Analysis Regarding Remediation and Shipment of Contaminated Soil Located Along the Rail Siding Adjacent to Neutron Products' Dickerson Plant

This ALARA analysis has been conducted on the off-site contaminated soil in the immediate vicinity of Neutron Products' Dickerson facility, based on the conditions at the facility and its environs during the summer of 2002. The only isotope of interest herein is cobalt-60.

I. Considerations

1.1 Locations of Off-Site Contamination

There are two basic types of off-site contamination arising from Neutron's operations:

a) One comprises discreet particles which have either been blown or carried off-site and which have occasionally been found during routine monthly surveys of surrounding properties. No sites of such contamination have been found off-site this year through the October survey of 2002. None were found in 2001 and two such sites were found in 2000. During the past 22 years, Neutron estimates that a few hundred such sites have been found and removed, none of which have represented a credible threat to public health and safety. When a site of activity is found, the property owner is notified and the contamination removed and returned to Neutron.

It is thought that most of the sites, including those found recently, were released several years ago, and that modifications to Neutron's facility and operations during the past two decades or so have greatly reduced the frequency of this type of release. However, Neutron's on-going operations (whether engaged in source fabrication or not) inherently entail some small release of cobalt-60 contamination and the continued release of some contamination in this manner cannot be completely precluded.

b) The second type of contamination is that carried from the courtyard or plant roof tops by stormwater run-off. The courtyard is a paved portion of the Limited Access Area which, although fenced, is otherwise open to the environment, and is located between Neutron's source fabrication plant and its RadWaste storage facilities. The contamination released by this mechanism and deposited downstream tends to be much more uniformly distributed than the discreet sites occasionally found on neighborhood properties.

After leaving the courtyard (or roof tops), stormwater run-off passes successively through a stone trap, a dry pond, a rip-rap outfall, and a grassy area within Neutron's fenceline. In each successive step, a significant percentage of the remaining contamination is removed. Analyses of removed soil and stone indicate that less than 2 millicuries per year enter Neutron's stormwater management system and that much more than 90% of such activity is removed thereby.

Finally, the run-off flows along and into an abandoned rail siding which is immediately adjacent to Neutron's property, and which serves to remove residual contamination. A

NEUTRON PRODUCTS inc

ALARA Analysis - Contamination on Abandoned Rail Siding

November, 2002

Page 2

waist-height survey of the area shows that the contamination along the siding is readily detectable near the dry pond outfall, but is indistinguishable from background from other sources (including skyshine from the plant) within a few dozen yards downstream thereof.

Again, the levels of contamination at issue herein do not present a credible threat to public health, safety, or the quality of the environment.

1.2 Dose to Members of the Public

Regarding the discrete particles found off-site referred to in 1.1(a), it is unlikely that such contamination would contribute materially to the annual exposure of any member of the public. Neutron's continuing program of off-site surveillance would be likely to detect any adverse trends in the off-site release of contamination by means of this vector, and it plans to continue its current program of conducting such surveys and removing and evaluating sites of contamination when found.

Regarding the contaminated soil on the rail siding and downstream thereof, the highest dose rate along the rail siding is generally approximately 40-50 $\mu\text{R/hr}$, whereas background in the area (including skyshine from the plant) is approximately 15 $\mu\text{R/hr}$. So, the contamination retained by the siding contributes a maximum of approximately 30 $\mu\text{R/hr}$ within a relatively small area not likely to be occupied for any meaningful length of time by anyone.

In fact, the member of the public likely to spend the most time in the area is the person who cuts the grass adjacent to the rail siding. As a conservative estimate, assume this individual spends 20 hours per year in this area, and further assume that all of that time is spent in the location with the highest dose rate. The annual exposure from the contamination at issue herein would be:

$$(30 \mu\text{rem/hr}) \times (20 \text{ hr}) = 600 \mu\text{rem} = 0.6 \text{ mrem} = 0.0006 \text{ rem}$$

Furthermore, it is extremely unlikely that all members of the public combined would spend more than 50 person-hours in this area in any given year, so that the *collective* exposure to the entire Dickerson community from the contamination released is likely to be well below 0.002 person-rem/year.

1.3 Prospective Use of the Land at Issue

The land at issue is primarily an abandoned rail siding along the main line of the CSX. It is unlikely in the extreme that this land will ever have a residential use, or become a park, or have any other use which would encourage lengthy visits by members of the public.

NEUTRON PRODUCTS Inc

ALARA Analysis - Contamination on Abandoned Rail Siding

November, 2002

Page 3

1.4 Likely End Result of Complete Remediation

Although the release from Neutron's facility of contamination in stormwater run-off has been greatly reduced during the past 20 years, some contamination is still being released by this mechanism, and will continue to be so released whether Neutron is fabricating sources or not. Neutron's efforts to enclose the courtyard, which would effect a further decrease in the amount of material released, have been thwarted in a manner which is not likely to be reversed in the near future.

As an alternative, Neutron has focused on ways to reduce the release of contamination from the Limited Access Area, and on improving the on-site capture of whatever contamination is released. As a result of this program, the dose rate along the abandoned rail siding has been declining for more than a decade, a trend which Neutron does not anticipate reversing in any material way in the future. That said, because low levels of contamination will continue to be released (as explained above), even if the rail siding were completely remediated today, it is likely that it would become contaminated again - to some very low level - in the near future.

II. Cost-Benefit Analysis

II.1 Benefits

The only prospective benefit to be derived from the remediation of the abandoned rail siding and the areas downstream thereof would be the reduction of the collective public exposure by a maximum of 0.002 person-rem/year. Using the NRC's NUREG 1530 (which places the value of a person-rem of exposure at \$2,000), the economic value of such dose reduction would be about \$4 per annum.

Including the estimated occupational exposure of Neutron's personnel from the contamination in the dry pond, the abandoned rail siding, etc. would increase the collective annual exposure to all individuals to a maximum of 0.010 person-rem/year. Thus, the complete remediation of the area could reduce all exposures by a maximum of 0.010 person-rem/year, thereby justifying the expenditure of \$20 per year.

II.2 Costs

There are several costs to consider, including the expenditure of human and material resources, the hazards associated with shipping the soil that is removed, the hazards associated with performing the work itself (including the operation of heavy equipment and the transportation of equipment to and from the work site), occupational exposure, etc.

It is ironic, for example, that the occupational exposure involved in performing the remediation

NEUTRON PRODUCTS inc

ALARA Analysis - Contamination on Abandoned Rail Siding
November, 2002
Page 4

(although truly trivial) would likely be more than that now received by all members of the public in toto from the contamination. However, for the purposes of this analysis, that occupational exposure will not be considered because it is so small as to not contribute materially to the prospective costs.

We estimate that, in order to remediate the abandoned siding and the areas downstream thereof to a soil concentration of less than 8 pCi/g, on the order of 1,000 cu.ft. of material would have to be removed. We estimate that our expenses would be as follows:

Manpower	\$ 8,000
Equipment rental	\$ 500
Cost of B-25's	\$ 6,000
Shipping	\$ 5,000
Disposal	\$20,000 - \$100,000 ¹
TOTAL	\$39,500 - \$119,500

In addition, MDE and NRC regulations require that remediation decisions be made only after considering all factors including "detriments such as traffic accidents expected to potentially result from decontamination and waste disposal". In this case, the disposal would likely involve two roundtrip tractor trailer shipments between Dickerson, MD and Clive, Utah - a total distance of approximately 8,000 miles.

Statistics provided by the U.S. Department of Transportation show that for every 100 million miles of tractor trailer shipments, the DOT expects to record approximately 200 accidents, 17 injuries and 0.4 fatalities. So, for a distance of 8,000 miles, the DOT would expect to record 2×10^{-2} accidents, 1×10^{-3} injuries, and 3×10^{-5} fatalities.

In addition, other potential risks to be considered include:

the risks of traffic accidents associated with transporting the empty B-25's to the job site entailing hundreds of additional tractor trailer miles;

the risks of traffic accidents associated with transporting the equipment to and from the job site; and,

the risks associated with using the heavy equipment on the job site.

¹ Some material may be acceptable for the bulk release program in the State of Tennessee, which explains the wide range of these estimates.

ALARA Analysis - Contamination on Abandoned Rail Siding
November, 2002
Page 5

For the purposes of this evaluation, because the costs clearly outweigh the benefits, these additional risks will not be quantified as additional costs.

II.3 Analysis

Setting aside for a moment the monetary aspects of the cost-benefit analysis, consider the comparative risks posed by the soil, if it is left in place, and if it is shipped to Utah.

Using even the deliberately overstated assumptions set forth by the linear no-threshold model (LNT) which claim that 4×10^{-4} additional cancer deaths will result from each collective person-rem of exposure, it is clear that, even if the soil contamination at issue were to contribute as much as 2 mrem/year of collective exposure to the public over the ensuing 5 years, the increased risk would result in 4×10^{-6} fatalities. In the preceding section, we determined that shipping the soil would result in 3×10^{-5} additional fatalities, so that the act of shipping the contaminated soil to Utah would be 7.5 times more likely to cause a fatality than simply leaving the soil in place.

Examining the monetary aspects of the cost-benefit analysis, it is clear that the anticipated expense of approximately \$50,000 overwhelms the maximum possible benefit of \$20 per year. Thus, we conclude that it is not *reasonable* to spend \$50,000 of real money to achieve a prospective \$20 per year benefit. Moreover, the expenditure of resources for such a purpose would deny Neutron the use of those funds to address matters of much more substance. Clearly, Neutron could use that \$50,000 to produce a much more substantial benefit. We submit that ALARA is intended to provide priority-setting guidance to regulators and licensees alike, and this analysis clearly demonstrates that the remediation of the abandoned rail siding, and the disposal of the contaminated soil therefrom, warrants a very low priority for the foreseeable future.

NEUTRON PRODUCTS inc

NEUTRON PRODUCTS inc

22301 Mt. Ephraim Road, P. O. Box 68
Dickerson, Maryland 20842 USA
301-349-5001 FAX: 301-349-2433
e-mail: neutronprod@erols.com

20 November 2002

via FAX (215) 814-3254

Ms. Chris Wagner
On-Scene Coordinator
Hazardous Site Cleanup Division
3HS31
1650 Arch St.
Philadelphia, PA 19103-2029

Dear Chris,

As we discussed by telephone last month, I am writing to transmit the ALARA analysis which we have prepared regarding the contaminated soil trapped in and around the abandoned rail siding which adjoins our facility. We would be interested in your critique, and would welcome some serious discussion.

Our submission of this analysis to you was delayed in order for us to learn more about the Memorandum of Understanding between NRC and EPA regarding, among other things, levels of soil contamination which would trigger NRC to request a consultation with EPA when NRC-licensed facilities are decommissioned. Although we are not directly regulated by NRC, as a practical matter we are regulated no less stringently by the State, and accordingly, the MOU is generally germane to our business, and specifically to the determination of an appropriate course of action in our current situation.

As you know, the levels of soil contamination trapped in the ballast along about 50 feet of the abandoned rail siding adjoining the southern boundary of our Dickerson plant site exceed both the MOU trigger level of 6 picoCuries per gram and the 8 picoCurie per gram limit that was imposed upon our 01 License by MDE and NRC in 1989. In fact, although that license limit has been responsible for nearly five thousand of the citations filed by the state in fabricating Neutron's record of alleged non-compliance referred to in your memo of September 27, 2002:

there is no evidence that our inability to satisfy that requirement caused or credibly threatened harm to persons, property or environmental decency; and

it is not credible that any member of the public has ever received as much as 3 millirem per year from that source (compared to about 300 from natural causes).

Ms. Chris Wagner
20 November 2002
Page 2

Moreover, throughout the period of our allegedly reckless non-compliance, no member of the public has ever been exposed to more than the 100 mrem/yr regulatory limit from all causes arising from Neutron's activities, and that number is now less than 50 mrem/yr for the most highly exposed individual. Yet, the flow of citations and MDE's false accusations that Neutron has "recklessly released radioactive material to the environment in an uncontrolled manner" are clearly designed to create "concerns" among the body politic (and apparently even among better informed persons such as you.)

While we cannot comment on the other MOU limits with the depth of data and experience that we have had as the result of melting about 8,500,000,000,000,000 picoCuries of cobalt-60, processing more 20,000,000,000,000,000,000 picoCuries of unclad cobalt-60, and managing the waste generated thereby, without credible adverse impact to persons or property, we find the MOU triggers for cobalt-60 contamination of soil to be excessively stringent by a wide margin, and surprisingly low compared to the MOU levels for some of the much more hazardous isotopes listed.

In any event, as you can see from our ALARA analysis, the MOU limits seem to be focused more on what can be measured with extraordinarily sensitive equipment than on what is reasonably required to protect the public health and safety, with a result that seems likely to mis-allocate priorities. If you think we have missed the point of all this, please advise. If not, we would like to discuss with NRC and EPA, and perhaps other interested parties, our thoughts for making better use of ALARA in both the adoption and enforcement of regulatory limits.

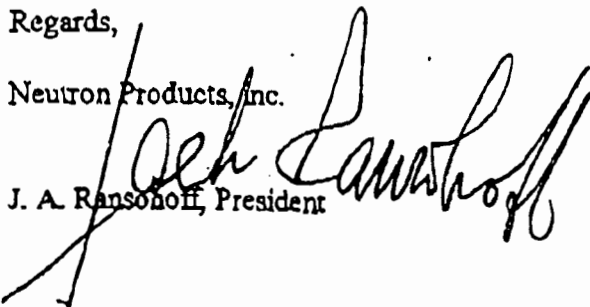
Summarizing in brief, we take note of the fact that the "trigger" limits have been surpassed by a substantial margin; and we came away from the NRC-EPA workshop conducted a few weeks ago with the impression that pulling the "trigger" does not execute the transgressing licensee, but rather initiates purposeful discussion and analysis among said licensee, NRC and EPA. In that spirit, we furnish the enclosed analysis; and in doing so, we respectfully request the initiation of serious discussions at the earliest possible time - and certainly before the issuance of your pending report.

In that regard, we have initiated other ALARA analyses, including one regarding the management of Neutron's RadWaste, which we trust you will evaluate and discuss with us before finalizing your report. Thank you for your interest, your comments, and your future cooperation.

Regards,

Neutron Products, Inc.

J. A. Ransohoff, President



NEUTRON PRODUCTS inc

cc: BR
FSK

MDE

MARYLAND DEPARTMENT OF THE ENVIRONMENT

2500 Broening Highway • Baltimore Maryland 21224
(410) 631-3000 • 1-800-633-6101 • <http://www.mde.state.md.us>

Parris N. Glendening
Governor

MAR 3 1999

Jane T. Nishida
Secretary

RECEIVED
MAR -5 1999

Jackson A. Ransohoff
Neutron Products, Inc.
22301 Mt. Ephraim Road
P.O. Box 68
Dickerson MD 20842

Dear Mr. Ransohoff:

Secretary Nishida has asked me to reply to your letter of February 10, 1999. As Director of the Air and Radiation Management Administration (ARMA), Secretary Nishida has delegated decision-making authority to me regarding permits and licenses for the administration. It appears that you may have misunderstood the remarks made by my staff, since, at no time, did they state that Secretary Nishida or the Governor could waive regulatory decisions with regard to permits, licenses and other matters related to the decommissioning issues currently before me. The decommissioning requirements are established by the U.S. Nuclear Regulatory Commission (NRC) and, as an Agreement State, Maryland must adopt and ensure compliance with appropriate NRC rules.

The following responds to the remaining matters discussed in your letter and at your meeting with my staff.

Financial Responsibility for the 01 License:

The rules which govern the provision of financial responsibility for your 01 license are those set forth in the regulations currently in force, specifically COMAR 26.12.12.01.01C.29 (C.29) and the relevant appendices, particularly Appendix G. The final rule adopted by the NRC on June 1, 1998, on self-financing has not been adopted by the State of Maryland and, in fact, may not be adopted as published. States review NRC rules and determine whether the rules are adopted wholly, partially or with appropriate amendments, subject to NRC approval.

If Maryland decides to adopt the NRC rule on self-financing, it would not be in place by April 13, 1999. More importantly, the NRC rule includes a requirement for strict conformance with General Accepted Accounting Principals (GAAP) accounting rules and a meeting of all of the financial ratios as established by an audited return signed by a registered Certified Public Accountant. The reason for these requirements is obvious, in that they provide that financial responsibility will be measured by objective standards that are equally applicable to all licensees. Should the Department adopt some form of the self-guarantee rule as promulgated by the NRC on June 1, 1998, the rule adopted would not depart from the requirement for these objective standards. As a result, it would appear that you would have substantial difficulty in meeting the requirements of the NRC rule or any variation likely to be adopted by the Department, even if it were in place at this time. Therefore, further discussions regarding the application of the June 1, 1998 NRC rule would not serve to change the underlying requirement.

Mr. Jackson A. Ransohoff
Page 2

In summary, you must conform with the existing MDE rules and provide proof of financial responsibility in the amount of \$750,000 by April 13th or a plan for decommissioning of the 01 licensed facility.

04 and 05 Licenses:

You appear to have sufficient resources to provide a financial responsibility mechanism as required by the decommissioning regulations for the 04 and 05 licenses. However, this provision must be unequivocal and in the form set forth in the NRC guidance documents. Therefore, it cannot be dependent upon any of the provisions listed in your letter. However, as Mr. Fletcher told you at the meeting, if you are unable to arrange financial responsibility for the 01 license, we believe that arrangements can be reached which would allow the planned decommissioning of the 01 facility to be carried out in such a manner as to permit the continued operation of the 04 and 05 facilities, particularly since similar arrangements have been made before. However, the financial responsibility instrument cannot be contingent in any way except as specifically set forth in the NRC guidance document we have previously discussed. The forms are set forth in the guidance document and they must be followed with the sole exception that the State of Maryland does not require a standby trust and that the references in the instruments are to statutes and regulations of the State of Maryland rather than those of the federal government. This means that any retention of control, either direct or indirect by you or by your nominee (other than a trustee duly appointed) will make the instrument unacceptable.

I hope this has cleared up any misunderstandings. Should there be any questions in this matter, please contact Mr. Roland G. Fletcher at 410-631-3300. You may also reach this office toll-free by dialing 1-800-633-6101 and requesting extension 3300.

Sincerely,



for Merrylin Zaw-Mon, Director
Air and Radiation Management Administration

MZM:dpn

cc: Jane Nishida, Secretary, Maryland Department of the Environment
Bob Field, Attorney General's Office

NEUTRON PRODUCTS inc

22301 Mt. Ephraim Road, P.O. Box 68, Dickerson, MD 20842

301-349-5001 Fax: 301-349-2433

E-mail: neutronprod@erols.com

FAX LEAD PAGE

Company: US EPA Pages: 8 (incl Lead Pg.)
To: CHARLES HOWLAND From: J. A. RANSOHOFF
VIA Fax: 215-814-2603 Date: 2-10-04
CC: REF NO: 04-069
Re:

• Comments:

CC TOM SNYDER LTR
W/ ATTACHMENT
DLD 2-6-04

If Fax is incomplete or illegible, please contact us at 301-349-5001

NEUTRON PRODUCTS inc

22301 Mt. Ephraim Road, P. O. Box 68
Dickerson, Maryland 20842 USA
301-349-5001 FAX: 301-349-2433
e-mail: neutronprod@erols.com

February 4, 2004

Via FAX (410) 537-3391

Mr. Thomas C. Snyder, Director
Air and Radiation Management Administration
Maryland Department of the Environment
1800 Washington Blvd
Baltimore, MD 21230

Dear Mr. Snyder:

This letter and its enclosure are in response to yours of January 22, 2004, which, among other things, expressed acute disappointment with our candid, informative and constructive response to the teleconference of November 10, and your letter of December 2, 2003.

Re: Neutron's Response to the Referenced Teleconference and Yours of December 2

During the teleconference of November 10, you and I had a very brief exchange of views which had a substantive influence on our letter of December 31, and the attachments thereto.

I suggested that, in view of relevant facts now proven, or reasonably believed to be true, you would be better advised to modify, rather than continue, your predecessor's decision to adopt and rigorously enforce COMAR C.29(g)(2) and the contested license conditions. You replied that you were relying on the advice of your staff and attorneys in that regard; and suggested that if we wanted you to modify that approach, we should make our case in writing.

In the course of our December 31 reply, we complied with that suggestion. To the extent that doing so constituted an error in communication, that error is mine; and I apologize for whatever confusion may have resulted therefrom. Nevertheless, you are now responsible for MDE's continuing role in the regulatory dispute you inherited; and for working with us to effect the most efficacious cure or mitigation of the resulting damage which we can devise. Believing you to be as committed as we to such a result, we were perhaps unduly encouraged by your December 2nd letter's positive report of realistic expectations, promising inclinations, and statements of a willingness consider practical alternatives; and we were perhaps insufficiently discouraged by its negative admonitions and restraints.

Mr. Thomas Snyder
February 6, 2004
Page 2

Re: Neutron's Reply to Yours of January 22nd

Nevertheless, if we are to terminate the decommissioning impasse of about twenty two months' duration, mitigate the damages incidental thereto, and restore meaningful decommissioning progress, both MDE and Neutron are well advised to first establish the probable truth or falsity of the premises upon which you have chosen to rely in your apparent decision to continue unabated, rather than reverse or mitigate, the decision of your predecessors to adopt and enforce C.29(g)(2) and the contested license conditions.

It is in that context that we respond to yours of January 22nd as best we can in view of the facts we have proved in the field (or reasonably believe) to be true; and the premises we have proved in the field (or reasonably believe) to be false. Thus, in assessing the relative merits of:

Neutron's one to two million dollar On Line approach to the incrementally self-funded and self-performed decommissioning of its licensed facilities and equipment, vis-a-vis

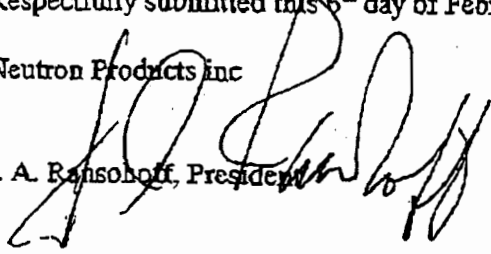
MDE's thirty to forty million dollar prematurely Shut Down approach to other party funding and performance of the same objective,

we hereby beseech you to act upon realistic facts and premises, the truth of which has been established in the field trials performed by the Parties during the past five years.

Respectfully submitted this 6th day of February, 2004,

Neutron Products Inc

J. A. Ransohoff, President



NEUTRON PRODUCTS inc

Neutron's Reply to "Essential MDE Questions"

Q1. The timing and content of the next shipment of RadWaste for disposal depends mostly upon factors which are more within MDE's control than ours.

1.1 For example, the use of the hot cell is vital for making waste shipments and for making other progress on the decommissioning project. Among other things, by preventing us from opening the hot cell door, MDE is well aware that it also prevents:

- ▶ the compaction of waste. The procedure for operation of the compactor requires that the hot cell door be open, a condition which has been precluded by MDE seals for approximately one and one half years;
- ▶ the evaluation and characterization of the contents of the pools and canals because we are prevented from performing any calibrations in the hot cell;
- ▶ the use of the hot cell for the characterization of waste prior to its shipment; and,
- ▶ routine maintenance of the hot cell, the manipulators, the hot cell window, etc., thereby jeopardizing the future usefulness of the hot cell for advancing the decommissioning project and other constructive purposes.

The seals put in place by MDE inspectors approximately a year and a half ago have inhibited our ability to advance the decommissioning project, including the shipment of waste, and serve no useful purpose, a condition which we unsuccessfully sought authority to reverse in the course of our letter of December 31st.

1.2 Within our control as then authorized by both MDE and the Courts:

- a) Circa mid-year 2002, we had set aside the funding required to pay for the out-of-pocket costs of the third year of shipments scheduled by the On Line Decommissioning Plan then in progress. Had continuing progress on that Plan been allowed to continue, its third year of implementation would have been substantially completed by year-end 2002, and we would now be into the fifth year of implementation - fully funded, below budget and ahead of schedule.
- b) Moreover, if we are not otherwise distracted, and are soon authorized to remove the shackles from the hot cell and its manipulators; to perform the repairs required to make them useful; and to undertake all activities reasonably required to resume some meaningful level of decommissioning activities, we could probably utilize the set-aside funds referred to in 1.2(a) to make the shipment planned for the second half of 2002, by year end, 2004.

NEUTRON PRODUCTS inc

Attachment to letter to ARMA Director Snyder

6 February 2004

Page 2

1.3 With regard to the content of such a shipment, it is our present expectation to compact as necessary, and effect the shipment of the majority of the high volume, very low activity dry active waste ("DAW") presently on site; and initiate the consolidation, packaging and shipment of other RadWaste forms and activities.

Q2. Particularly in view of the uncertainties we face, we will not be able to report, for several months, accurate figures for income, expenditures and cash flow for 2003. Meanwhile, we can provide the following estimates which are relevant to your question:

- a) Neutron's gross unadjusted sales for 2003 are presently estimated to be about \$5.5 million; its cash disbursements for the year will be comparable; and
- b) its cash flow from operations for 2003 are estimated to be about \$250,000.

Of equal or more significance, prior to the escalation of regulatory hostilities in 1999, the established ability of the existing plant to generate gross revenues and cash flows from operations averaged more than \$9 million and \$1 million per year, respectively, for the entirety of the preceding 10 year period.

Q3. Regardless of the date generated, a reasonable schedule for the shipment of Radioactive Waste for disposal is going to be dependent upon the resources available for that purpose. If the Department, or some other duly authorized regulator, decides either to fund itself, or to approve without much further delay, an active version of the On Line Plan MDE disrupted nearly two years ago, the details of which are negotiable, we would expect to resume a gradually increasing pace of comparable decommissioning funding and performance activity within six months or so after authorization to proceed.

3.1 Conversely, if limited by all the restraints imposed by yours of January 22, and without some other source of funding, we have no way to judge how long it will take for us to find a way to resume substantive shipments of radioactive waste, with the possible exception of the shipment identified in subparagraph 1.2(a) above. In the interim, it will be our primary objective to continue in business as best we can in the circumstances, and do what is reasonably required to protect both the public health and safety, and what is left of our property values.

Q4. On October 20, 2000, based upon more a than a year of competent analysis and critique, we submitted to the Department a practical plan, based upon the facts available to us at the time. We are aware of no evidence that the plan we submitted was flawed in any material respect.

4.1 Rather, based upon what we learned in the course of implementing that plan as authorized by three separate Court Orders, we have strong evidence, which we reported to you in Section II of Attachment #1 to our letter of December 31, 2003, that the Plan we submitted had proved to

NEUTRON PRODUCTS inc

Attachment to letter to ARMA Director Snyder

6 February 2004

Page 3

be viable with regard to radiation safety, environmental protection, funding, and implementation.

4.2 We would be pleased to work with you to negotiate the details of an alternative, equally viable Plan which would include the more constructive and promising aspects of your December 2nd approach - one of which was your suggestion that we contact the source recovery project at Los Alamos.

Q5. All the comments of our reply to Question 4 apply; as do the methods, many of them proprietary, used in effecting the substantial progress achieved prior to June 27, 2002 under Neutron's existing plan.

Q6. As is well known to your staff, and pursuant to good health physics practice, Neutron has performed several evaluations to determine the likely exposure received by any member of the public most likely to receive any exposure from the contamination referred to in Question 6. Such evaluations have repeatedly shown that it is not credible that the most highly exposed member of the public would receive more than 2 mRem/year from the referenced soil contamination, a mere 2% of the limit set by duly promulgated regulations, about 1% of average sea level exposure from all natural sources, and only half that received in the course of a trans-continental commercial airline flight.

6.1 Moreover, although Neutron has not been permitted to enclose its Courtyard, it has undertaken a number of measures to further reduce its long inconsequential release of contamination from its property; and the level of off-site contamination has persistently declined for more than a decade.

6.2 Meanwhile, our continuing contamination control activities have focused on the periodic recovery of activity from locations effecting the highest levels of contamination removed from storm-water pathways, such as the on-site stone trap, dry pond, and rip-rap downstream thereof. Your staff is well aware that those efforts have proven effective in contributing to the persistent reduction of exposure rates immediately downstream of the plant as is depicted graphically in Figure 1.

6.3 Although we are continuing our efforts in that regard, and final soil remediation is addressed in our On Line Plan, the level of soil contamination is so low that its shipment for disposal is unlikely to command priority over other decommissioning activities. Meanwhile, Neutron has an interim proposal for final disposal we would like to make whenever the time to do so becomes more propitious than is currently the case.

Regarding Required Neutron Actions

R1. It is neither practical nor productive for Neutron to engage in the continuous monitoring

NEUTRON PRODUCTS inc

Attachment to letter to ARMA Director Snyder
6 February 2004
Page 4

of storm-water run-off as it flows, because of the extremely low concentrations of contamination therein, its inherent lack of ability to turn off storm-water, and the paucity of benefits which would result if it were able to do so. Otherwise, it is a well established fact that, with rare exceptions of no material consequence, Neutron has been both willing and able, within the limits of available resources and authorizations, to "accomplish the adequate containment of radioactive materials from contaminated areas of the LAA, continuous monitoring of release pathways, proper waste storage, and regular shipments of radioactive waste to a licensed repository."

R2. As we have advised MDE on numerous occasions, both orally and in writing:

- a) it is potentially possible, but unlikely, that Neutron will be able to perform the required actions under all the restraints imposed by MDE's rigorous enforcement of C.29(g)(2) and the contested license conditions;
- b) conversely, it has been proven likely, if not certain, that Neutron will be both willing and able to perform the required actions if C.29(g)(2) is substantially ameliorated or repealed; and
- c) we have long been willing and able to negotiate practical adjustments in the details.

R2.1 We respectfully submit that the Plan we submitted in October, 2000, provided an eight to ten year schedule for reaching all the decommissioning objectives reasonably foreseeable at the time; and that the other "deficiencies" alleged by MDE are disingenuous in the context of Neutron's practical approach to the genuine task at issue.

R3. We have obtained the referenced NRC document, and would be happy to discuss its applicability with you after we have had a chance to review it.

Conclusion

From yours of January 22, the communication gulf between us appears to be widening rather than narrowing; and it seems to me that we may need some help from others to narrow the gap. Meanwhile, please reflect upon the following sequence of communications.

1. In yours of December 2, among other encouraging statements, you stated in part that MDE:

- a) "...is inclined to approve specific proposals for the processing for sale of cobalt-60 sources currently in the pool"; and,

NEUTRON PRODUCTS inc

Attachment to letter to ARMA Director Snyder

6 February 2004

Page 5

- b) "...might consider a plan involving the use of the -01 canal..." for refueling the radiation processing plants.
- 2. Those statements brought forth from Neutron a response which stated that "...the timely realization of those prospects are vital to Neutron's ability to resume and sustain a decent pace of decommissioning progress while mitigating the presumably unintended damages of premature license termination to Neutron, to the end use beneficiaries of its principal products and services, and to the effective competition we have brought to health care providers on an international scale."
- 3. In view of the initial statements by MDE and our enthusiastic response thereto, it is difficult for us to understand any rational basis for either:
 - a) Departmental Guidance #1 which states that "MDE will not consider any proposal by Neutron to resume -01 manufacturing operations"; or,
 - b) for MDE to insist that Neutron submit a business plan for the continued operation of the -04 and -05 licenses which does not permit the transfer of sources to and from the storage pool of the -01 license during refueling operations.

We answered the three items in your December 2nd letter as constructively and as completely as we could in view of all of the circumstances. Regarding items 1 and 3, we have been operating without revenue from the -01 license for nearly two years now. It has been difficult, we (and innocent third and fourth parties) have been damaged in a material way, our workforce has been reduced significantly, but we have thus far managed to survive in a manner which is duly protective of the public health and safety. That is the best information we can provide regarding the continuing viability of the -04 and -05 licenses under existing regulatory conditions.

Item 2 is addressed in our responses to Q4 and Q5.

NEUTRON PRODUCTS inc

NEUTRON PRODUCTS inc

22301 Mt. Ephraim Road, P.O. Box 68, Dickerson, MD 20842

301-349-5001 Fax: 301-349-2433

E-mail: neutronprod@erols.com

FAX LEAD PAGE

Company: US EPA Pages: 4 (incl Lead Pg.)
To: CHARLES HOWLAND From: S.A. RANSOFF
VIA Fax: 215-814-2603 Date: 2.17.04
CC: REF NO: 04 079
Re:

• Comments:

CC MDE LTR DTD 1/22/04

If Fax is incomplete or illegible, please contact us at 301-349-5001

CC FSK
BR
DWD
ED
JCT
JWS**MARYLAND DEPARTMENT OF THE ENVIRONMENT**

1800 Washington Boulevard • Baltimore MD 21230

410-537-3000 • 1-800-633-6101

Robert L. Ehrlich, Jr.
GovernorKendal P. Philbrick
Acting SecretaryMichael S. Steele
Lt. Governor

January 22, 2004

JAN 23 2004

Mr. Jackson A. Ransohoff, President
Neutron Products, Inc. (NPI)
22301 Mt. Ephraim Road
P.O. Box 68
Dickerson, MD 20842**RE: Radioactive Materials License Numbers: MD-31-025-01, MD-31-025-03, MD-31-025-04, and MD-31-025-05**

Dear Mr. Ransohoff:

This letter responds to several facsimile transmissions from Neutron to me at the Maryland Department of the Environment and my telephone conversation with you on Friday, January 9, 2004. I was disappointed that the voluminous documents you submitted did not provide an adequate response to my December 2, 2003 letter. To ensure that there has not been a miscommunication, I will briefly restate what I expected from Neutron on December 31, 2003.

1. A business plan outlining how the -04 and -05 licenses can operate successfully **without access to sources** in the -01 pool.
2. A radioactive waste shipping plan for the -01 license that conforms to license conditions and court orders and schedules currently in effect.
3. A current financial assessment and a financial plan outlining anticipated expenditures and income projected from the operation of the -04 and -05 irradiators in the absence of -01 source. An audited financial assessment is expected within the next 6 months.

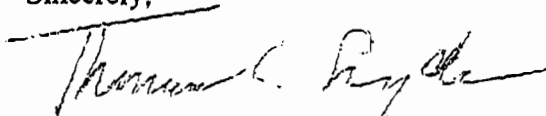
MDE is no longer confident that the DOE proposal recommended to you in my last letter will be available as a way of lessening the financial impact of decommissioning your facility. It is imperative therefore that Neutron be focused on ways to remove all cobalt 60 possessed under the -01 license safely and expeditiously.

Jackson A. Ransohoff
Page 2

I have enclosed as a guide, specific questions and actions we require. I anticipate a response by February 6, 2004. If your response accurately and competently addresses MDE concerns, we should be in a position to thoroughly examine all aspects of continued -04, -05 operations and to make some decisions concerning available options.

Specific questions regarding this letter may be referred to Mr. Roland Fletcher or any member of the Radiological Health Program staff he designates at 410-537-3300. In Maryland, you may also call toll free at 1-800-633-6101. The last four digits in each case is the extension number. I look forward to your response.

Sincerely,



Thomas C. Snyder, Director
Air and Radiation Management Administration

Enclosure

cc: M. Rosewin Sweeney
Roland G. Fletcher

ESSENTIAL MDE QUESTIONS

1. What quantity of cobalt 60 will be shipped next and when?
2. What were Neutron's income and expenditures for 2003?
3. When will Neutron provide a reasonable schedule for shipment off site for disposal of all radioactive material that was generated prior to August 1999?
4. When will Neutron submit for the Department's approval the required comprehensive plan for disposal of all low level radioactive wastes?
5. When will Neutron submit for the Department's approval the required Decommissioning Plan describing methodologies to be used for cleanup?
6. When will Neutron remove all soils exhibiting levels of cobalt-60 contamination exceeding 8 picocuries per gram above background?

REQUIRED NEUTRON ACTIONS

- Neutron must accomplish the adequate containment of radioactive materials from contaminated areas of the LAA, continuous monitoring of release pathways, proper waste storage and regular shipments of radioactive waste to a licensed repository.
- Neutron must submit a revised decommissioning funding plan (license termination plan (LTP)) that describes the maximum feasible reduction in radioactive material at the site over the next 10 years considering only the use of revenues from -04 and -05 irradiator activities. Neutron's previously submitted LTP was disapproved because it did not:
 - Discontinue the use of all sources authorized under the -01 license.
 - Provide a reasonable schedule for shipment of radioactive material off site
 - Describe methodologies for cleanup following the discontinuance of all routine licensed activities.

These deficiencies should be addressed in the revised plan.

- Neutron should use USNRC NUREG-1727 "NMSS Decommissioning Standard Review Plan" dated September 2000 as a guide.

DEPARTMENTAL GUIDANCE

1. MDE will not consider any proposal by Neutron to resume 01-manufacturing operations.
2. Neutron's repeated allegation that it has been over regulated or that there is a Department bias against its successful operation has no basis and; we will not respond to it again. Similar arguments have been presented to and rejected by this Department, the Office of Administrative Hearings, the Circuit Court for Montgomery County and the Maryland Court of Special Appeals.
3. Neutron's best chance for the continued operation of the -04 and -05 licenses is an accurate, informative and complete response to the Department's questions contained in the December 2, 2003 letter and this correspondence.

Maryland Department of the Environment
Radiological Health Program

Memo to: Alan Jacobson
From: Donna Gaines
Date: July 10, 2000
Subject: Telecon with Jeff Williams from NPI

On July 10, 2000 at 1500 hrs. Mr. Williams called RHP to report two incidents. Ms. Donna Gaines took the call.

1. A reading of 73,700 dpms was reported by the Heckman on Dick Demory's right shoe cover.
2. During a property survey at the residence of _____ located at _____, Dickerson, Maryland environmental contamination was detected. The survey was conducted by Ms. Cathy Bupp on 7/10/00, and the "hot spot" detected approximately at 1200 hrs. She was then assisted by Danny Wineholt and Billy Ransahoff. Background was 8uR/hr. Contact with the hot spot was reported as 50 uR/hr, 20 cm from a pail of dirt that was removed was reported as 8uR/hr above background, and 1 meter from the hot spot was equal to background. The survey was conducted using an Eberline E600 and Bicron MicroRem meter. The spot was found underneath of a tree in an area 2ft x 4ft. A total of 25 gallons of soil were removed and it was determined that 0.5 microCuries of Co-60 were present. The _____ are out of town until tomorrow. Their property is between _____ and the park. This property survey was originally scheduled for last month. A more detailed analysis on the activity is to be conducted.

was not controlled.

10. Perimeter Monitoring Program:

The licensee monitors the boundary of the facility using Eberline TLDs which are processed quarterly and placed approximately 100 feet apart. Records were reviewed for the calendar year of 1996. Results indicated compliance with the 500 millirem per year regulatory limit. Results of TLDs placed by the RHP at selected sites at the boundary of the plant also indicates compliance. On April 30, 1997, I noticed that NPI did not have monitors posted on a 450 foot section of the perimeter near the road, dry pond and railroad tracks. I searched the area but the missing monitors could not be found. I also discovered that five TLDs posted by the RHP were also missing. I suspect that these monitors were removed intentionally by unknown persons.

Issue of Concern:

Radiation monitoring devices belonging to NPI and the RHP were removed from designated sites at the boundary of the facility by an unknown person. As a result, radiation levels at this boundary were not continuously monitored to establish compliance with regulatory limits described in Amendment-33 Item L.

11. One Kilometer Surveys:

Issue of Concern:

referred to
NPI personnel conduct monthly surveys of properties located within a one kilometer radius of the plant. Records were reviewed from January 1996 to March 1997. On February 18 and 22, 1997, NPI personnel conducted a survey of a private property located almost one kilometer from the plant and identified two contaminated spot containing 0.5 and 0.7 microcuries of cobalt-60. The inspection team's review of NPI's one kilometer surveys indicated a significant decrease in surveys of private residential properties. Only three private homesites were surveyed by NPI since January 1996. Furthermore, NPI has still not surveyed the majority of the homesites located within the one kilometer radius.

12. Cobalt-60 in Soil

Item of Noncompliance:

The radiation dose rate at one meter above the ground surfaces of the dry pond and the adjacent railroad property exceeds the dose rate limit of 10.0 microR/hr above background. The adjacent property owner has still not been notified. Furthermore, the laboratory analysis of the soil sample collected from the dry pond and the adjacent property on June 28, 1996, December 12, 1996 and April 30, 1997 exceeded the 8.0 picocuries per gram concentration limit for cobalt-60 contamination. This issue has been determined to be an ongoing violation that still remains unresolved.

Issue of Concern:

Cobalt-60 continues to be found outside of NPI's boundary thus substantiating the loss

Mr. Carl E. Trump, Jr.
16 October 2001
Page 18

9/7/01	FD-003	8 cu.ft.	140 mr/hr (contact)
9/7/01	FD-004	8 cu.ft.	13 mr/hr (contact)
10/10/01	FD-005	8 cu.ft.	100 mr/hr (contact)

Question 31 requests:

"Copies of the LAA Daily Checks for each day from June 13-28, 2001."

Response:

Q31.1 The records are available for your review.

Question 32 requests:

"Proposed radioactive waste shipment schedule, including proposed shipment date, volume, activity, description of waste and disposal site for the remainder of 2001 and the year 2002."

Response:

32.1 Our intended radioactive waste shipment schedule is provided in our proposed Decommissioning Plan which, for the years 2000 through 2003, has been advanced in time to satisfy the specific shipping requirements of the Modified Order for the years 2001 and 2002. As a matter of practicality, unless otherwise justified by MDE pursuant to Comments 4 and 5, we believe that the schedule of the proposed Plan should supersede all other RadWaste shipping requirements now required by contested provision 21 of the 01 License.

32.2 As you know, the Modified Order requires us to meet the shipment schedule we negotiated at our November 9, 2000 meeting. At that meeting, it was understood that the waste to be shipped was low in activity (in order to minimize personnel exposures) and primarily compactible material, and that all volumes would be stated on an uncompacted basis. The negotiated schedule comprised:

one shipment of low activity DAW of at least 600 cu.ft. by June 30, 2001;

another shipment of comparable material, bringing the total shipped to at least 1200 cubic feet by December 31, 2001; and,

a third shipment by June 30, 2002.

Mr. Carl E. Trump, Jr.
16 October 2001
Page 17

legitimate intent. Rather, said counter-productive Regulations and License Conditions have served primarily to further the intent so candidly reported by OAG in Circuit Court to assure against the profitable operation of said facilities; and under such circumstances, we are unlikely to be able to comply.

29.3 Nevertheless, in the course of the litigation now approaching the ultimate counter-productive result long sought by MDE, Neutron's continuing objective has been assisted in part by Court Orders which have thus far enabled it to advance its objective to conceive, develop and implement a safe and viable, self-funded Decommissioning Plan; and if either MDE or the Courts, preferably both, are inclined to encourage the continuance and expansion of the progress thus far achieved, Neutron's management is confident of its ability to achieve the results forecast by its yet to be approved Plan.

29.4 Conversely, if the Permanent Injunction is enforced as apparently intended by MDE, Neutron's management is much less likely to have the resources required to continue the effort it has so nobly advanced during the past thirty months of handicapped but productive pursuit of the objectives espoused in 29.1.

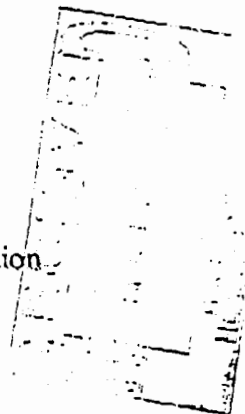
Question 30 requests:

"Date, volume, activity, identification number of all waste currently on site that was generated after August 1999."

Response:

Q30.1 In addition to the recovery of contaminated soil, the waste generated after August 1999 which has not been shipped entails:

1/2000	waste tube	12" x 1.5"	500 mr/hr in 3 ft. of water
1/2000	waste tube	12" x 1.5"	200 mr/hr dry - Argentine cladding
4/20/00	drum	8 cu.ft.	130 mr/hr (contact) - metal, pumps
6/20/00	waste tube	12" x 1.5"	500 mr/hr @ 1m - teletherapy waste
7/12/00	drum	8 cu.ft.	rubble from decon room clean-up
7/12/00	drum	8 cu.ft.	hot cell DAW
10/10/00		4 cu.ft.	HEPA filter. Est. 71 mCi
3/28/01	waste tube	24" x 1"	~ 1 Ci. Arg. target tubes, end caps
5/2/01	6 waste tubes	1.5"	~ 1 Ci each - from DII source fabrication
7/16/01	FD-001	8 cu.ft.	50 mr/hr (contact)
7/16/01	FD-002	8 cu.ft.	450 mr/hr (contact)
8/10/01	Shield #14	3 cu.ft.	~ 1 Ci - main pool resin



NEUTRON PRODUCTS inc

Mr. Carl E. Trump, Jr.
16 October 2001
Page 17

legitimate intent. Rather, said counter-productive Regulations and License Conditions have served primarily to further the intent so candidly reported by OAG in Circuit Court to assure against the profitable operation of said facilities; and under such circumstances, we are unlikely to be able to comply.

29.3 Nevertheless, in the course of the litigation now approaching the ultimate counter-productive result long sought by MDE, Neutron's continuing objective has been assisted in part by Court Orders which have thus far enabled it to advance its objective to conceive, develop and implement a safe and viable, self-funded Decommissioning Plan; and if either MDE or the Courts, preferably both, are inclined to encourage the continuance and expansion of the progress thus far achieved, Neutron's management is confident of its ability to achieve the results forecast by its yet to be approved Plan.

29.4 Conversely, if the Permanent Injunction is enforced as apparently intended by MDE, Neutron's management is much less likely to have the resources required to continue the effort it has so nobly advanced during the past thirty months of handicapped but productive pursuit of the objectives espoused in 29.1.

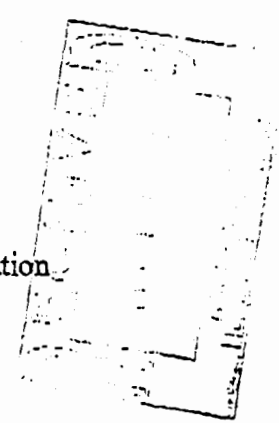
Question 30 requests:

"Date, volume, activity, identification number of all waste currently on site that was generated after August 1999."

Response:

Q30.1 In addition to the recovery of contaminated soil, the waste generated after August 1999 which has not been shipped entails:

1/2000	waste tube	12" x 1.5"	500 mr/hr in 3 ft. of water
1/2000	waste tube	12" x 1.5"	200 mr/hr dry - Argentine cladding
4/20/00	drum	8 cu.ft.	130 mr/hr (contact) - metal, pumps
6/20/00	waste tube	12" x 1.5"	500 mr/hr @ 1m - teletherapy waste
7/12/00	drum	8 cu.ft.	rubble from decon room clean-up
7/12/00	drum	8 cu.ft.	hot cell DAW
10/10/00		4 cu.ft.	HEPA filter. Est. 71 mCi
3/28/01	waste tube	24" x 1"	~ 1 Ci. Arg. target tubes, end caps
5/2/01	6 waste tubes	1.5"	~ 1 Ci each - from DII source fabrication
7/16/01	FD-001	8 cu.ft.	50 mr/hr (contact)
7/16/01	FD-002	8 cu.ft.	450 mr/hr (contact)
8/10/01	Shield #14	3 cu.ft.	~ 1 Ci - main pool resin



NEUTRON PRODUCTS inc

Mr. Carl E. Trump, Jr.
16 October 2001
Page 5

Concern 4

These issues are addressed in our response to Questions 27, 28, and 29.

Concern 5

We believe this issue has been amicably resolved.

Answers to Description of Requested Information

Question 1 asks:

"When will NPI establish compliance with the soil concentration limits described in License Condition 22.B? When will the soil be shipped for disposal? What steps will NPI take to establish compliance with License Condition 22.B? What is the estimated volume of soil that exceeds Condition 22 that has not been removed?"

Response:

Q1.1 As described in the opening portion of this response, this is one of the contentious issues between Neutron and MDE which is at an impasse and which we propose to attempt to resolve with knowledgeable third party assistance.

Question 2 requests:

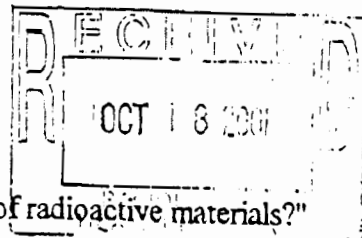
"Volume, activity, date removed, container identification number and current location of all soils removed from the stone trap, dry pond and areas down stream."

Response:

Q2.1 Over the years, we have removed more than 3,000 cu.ft. of soil. It is contained in approximately 23 B-25's and 135 drums. We estimate the total activity contained therein to be less than 0.1 Ci. As you are aware, all containers of contaminated soil are located within the LAA.

Question 3 asks:

"What effective steps has NPI taken to improve containment of radioactive materials?"



NEUTRON PRODUCTS inc

MEMORANDUM

Copies { / / / }

To Files (MD-31-025-01) From Ray Manley Date 10/31/91
Subject LIMITED INSPECTION AT NEUTRON PRODUCTS, INC (NPI)

Licensee: Neutron Products, Inc.
Address: 22301 Mt. Ephraim Road
P.O. Box 68
Dickerson MD 20842

Date: April 23-25, and 30, 1991

Participants: MDE-Ray Manley, Alan Jacobson, Neil Quinter, Rosewin Sweeney
USNRC-John McGrath

NPI-Jack Ransohoff, Wayne Costley, Frank Schwoerer, Joe Weedon, Kim Harmon, Wayne Marsh, Bernie Boswell, Jeff Corun, Dale Repp

Apr. 23, 1991: A site visitation and orientation was given at NPI for the representatives from the State's Attorney General's office. Tours were taken of the L.A.A., irradiators, dry pond, and manufacturing areas.

An entrance interview was held with Messrs. Ransohoff, Costley, Manley, Jacobson, Quinter, and Ms. Sweeney. The MDE compliance action against NPI was discussed.

Apr. 24-25, 1991: A site visitation and orientation was given at NPI for Mr. McGrath of the U.S. Nuclear Regulatory Commission (USNRC).

The following areas were reviewed during the inspection:

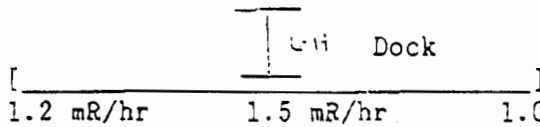
1. DOSIMETRY: Reviewed from previous inspection.
 - a. Whole body maximum exposure 1st quarter 1991: 1780 mRem
 - b. Maximum exposure whole body monthly in 2/91: 797 mRem
 - c. Maximum exposure whole body monthly in 1/91: 928 mRem
 - d. Maximum 1st quarter 1991 extremity: 3488 mRem
 - e. TLD monitoring reports in the restricted area office which sits near the roof of the radioactive material waste storage rooms:

1st quarter 1991 window TLD - 2313 mRem
1st quarter 1991 wall TLD - 2103 mRem
 - f. TLDs upstairs in lobby (unrestricted) located on wall midway between windows -
1/91: 421 mRem, 2/91: 366 mRem.

- g. TLDs downstairs lobby near sign-in - 1/91: 198 mRem, 2/19: 209 mRem.
- h. Environmental TLD results for 1st quarter 1991 (attached) indicated spots projected above the 500 mRem license limit. The hottest dose in the dry pond has dropped below the 100 mRem in one week from previous quarter. Doses at points 13 and 14 are anticipated to drop following completion of soil clean-up in the dry pond.
2. CALIBRATION OF METERS: Calibration of NPI meters were reviewed from the previous inspection with all meters found to be currently in calibration. A demonstration of NPI calibration technique was conducted by Wayne Marsh using NPI's 9.88 mCi "gold pin" Co-60 source. No deficiencies were noted. The area was properly controlled and posted during the calibrations.
3. AIR SAMPLING:
- a. Maximum concentration by record review L.A.A. was 7.9×10^{-11} uCi/cc on 3/7/91.
- b. Maximum Eberline sample (hot cell effluent), 3/22/91: 6.5×10^{-13} uCi/ml. Samples were taken at the required weekly frequency.
- c. During the inspection, NPI requested a relaxation of their (NPI) Eberline effluent sampling procedure, which requires daily sampling of bare Co-60 use. After a telecon with Mr. Trump of the RHP, this requirements was relaxed to weekly, as required in amendment #33.
4. LEAK TESTS OF SEALED SOURCES: Tests are conducted by Joe Weedon. The last test was conducted on April 16, 1991 on ten sources and indicated <.005 uCi of removable contamination.
5. CHANNEL PRESSURE: A physical check was made of all pressure channels around the main pool and canals, and indicated pressures within license specifications. A review of 1st quarter records indicated pressures remaining within specifications.
6. RADIOACTIVE MATERIAL WASTE SHIPMENT: Two shipments were made to Beatty, Nevada,
- | | | |
|---------|------------|--------|
| 3/21/91 | 59 cu. ft. | 140 Ci |
| 4/3/91 | 54 cu. ft. | 75 Ci |
- NPI decreased overall dose rate of shipments by grouting the waste in the drums.
6. SECURITY: (Item of Noncompliance) On April 24, 1991, it was noted that two doors within the LAA leading from the main pool area to the outside courtyard were unsecured.
- a. Door 1: The sliding door in the room behind the hot cell was unsecured and interviews with NPI employees indicated that it had been so since the evening of April 23, 1991.
- b. Door 2: The machine shop roll-up door, which is located adjacent to the employee (combination lock) entrance from the courtyard into the main pool area, was found unsecured. Interviews with NPI employees indicated a question as to whether this roll-up door had ever been secured in the history of the facility. Both doors were secured prior to the end of 4/24/91.

2/31

7. MANAGEMENT OVERSIGHT OF HOT CELL ACTIVITIES: (item of noncompliance) It was noted during the inspection that there were two sets of keys available to allow access to the hot cell interlock override. In a September 25, 1991 letter to RHP, NPI stated that control of this key would be maintained only by the RSO. Contrary to this, Mr. LeGuellec had a key to this system in his office without the knowledge of the RSO.
8. OBSERVATIONS: (item of noncompliance) While observing the interior of the NPI waste rooms from the outside courtyard, a cola beverage bottle was noted to be in a bag of radioactive material waste. This was cited as evidence of consumption of that beverage within the L.A.A.
9. REVIEW OF NPI CONTAMINATION WIPES: NPI contamination wipes were reviewed between 3/1/91 and 4/25/91. A maximum activity of 29,000 dpm was noted within the anteroom behind the cell. All contamination noted in the non-contamination control areas of the L.A.A. and unrestricted area had been decontaminated.
10. CO-60 ACTIVITY IN THE DICKERSON NEIGHBORHOOD FROM NPI SURVEYS:
- a. Mr. Meem: 6 spots 2/14/91 maximum activity 425,396 dpm - .2 uCi.
 - b. Beth Holmes: (east fence of NPI) maximum activity 2,110,633 dpm - .95 uCi.
 - c. Mr. Fisk: 1 spot at 12,000 dpm - .006 uCi.
11. INDEPENDENT SURVEYS, EBERLINE E-520 WITH HP 270:
- a. Survey of outside radioactive material catch basin:
max. 3 mR/hr, adv. 1 mR/hr
 - b. Dose rate at hot cell interlock - 400 mR/hr.
 - c. Dose rate at Helguson monitor - 35 uR/hr.
 - d. Dose rate in unrestricted area loading dock at 6 feet from cement shield of waste room:



1.2 mR/hr 1.5 mR/hr 1.0 mR/hr
 - e. Lobby at base of steps, 1.0 meter from the floor - .4 mR/hr.
 - f. Lobby at top of steps, at contact with window - 2. mR/hr.
 - g. Lobby at top of steps, 9" from first window, down the hallway, at one meter from the floor - 2.1 mR/hr.
 - h. Top of steps lobby, 9" from second window, down the hall, at one meter off the floor - 1.8 mR/hr.
 - i. Second floor lobby at restricted door - 1.0 mR/hr.
 - j. Second floor at center of hallway - 1.5 mR/hr.

- k. Second floor lobby at Harmon's desk - .4 mR/hr.
- l. Second floor lobby at desk, in second office - .3 mR/hr.
- m. Roof of radioactive material waste rooms, maximum contact - 400 mR/hr.
- n. Roof of radioactive material waste rooms, at one meter - 200 mR/hr.
- o. Facility perimeter survey with Bicron Micro/REM, s/n A2875:
- | | | |
|---------------------|----------------|----------------|
| Site #12 - 60 uR/hr | #16 - 90 uR/hr | #20 - 15 uR/hr |
| #13 - 250 uR/hr | #17 - 95 uR/hr | #21 - 70 uR/hr |
| #14 - 220 uR/hr | #18 - 90 uR/hr | |
| #15 - 60 uR/hr | #19 - 90 uR/hr | |
12. STATUS OF HEALTH PHYSICS REPORTS: NPI is requesting a change in amendment #33 to allow the RSO to compile the monthly report and Mr. Potter to review and approve it, following completion. Mr. Ransohoff was informed that under amendment #33, monthly reports are still required from Mr. Potter. A copy of the March, 1991 report prepared by the RSO is attached.
13. STATUS OF NPI RANDOM INSPECTIONS: See attached NPI memo dated April 22, 1991. NPI states that Mr. Turkanis is in the process of developing this plan. No documentation of random inspections, to date, was available for review.
14. RADIATION SAFETY COMMITTEE MEETINGS: Last meeting was held 4/22/91. Other meeting dates: 3/22/91, 2/5/91, 2/15/91, and 2/26/91.
- Scope: Random inspections, high activity waste shipments, hot cell interlock.
- Personnel Present: Jack Ranschoff, Frank Schwoerer, Marvin Turkanis, Tom Potter, Jeff Corun, Donnie Franklin.
15. TRAINING: Training has been held approximately monthly in 1991. Scope of training involves review and update of procedures 1003, 1011, 5001, 1001, 1003, 1010, 5004, and 5010. The next meeting is scheduled for 4/26/91. Previous meetings 2/12/91, 2/8/91, 1/25/91, were documented.
16. STATUS OF DRY POND CLEAN-UP: The clean-up of the dry pond area was in progress during this inspection. A preliminary survey of 41 soil samples were taken. Initial NPI instrument surveys of soil indicated contact dose rates of .6 mR/hr to 4.0 mR/hr. Bernie Boswell has been put in charge of the survey and clean-up. Clean-up began on 4/15/91. Sixty-four man hours (between Messrs. Boswell and Demory) have been used to remove 6 to 8 inches depth of soil (by shovel) and placed into 9 fifty-five gallon drums (stored in the courtyard). Mr. Boswell estimates that 70% of the activity has been removed. Current contact dose rates following removal are between .1 and .8 mR/hr at contact, and between .1 and .4 mR/hr at waist height. Following daily clean-up procedures, personnel are checked by the facility contamination monitor. Following the dry pond clean-up ("phase two"), the railroad property contamination is to be surveyed and cleaned-up.
17. STATUS OF SUMP: Mr. Ranschoff stated that without water flow in sump area, there should be no additional radioactive material mobility within the soil. Mr. Schwocrer stated that removal of soil under the clean area may undermine the

structure of that area. Mr. McGrath suggested that an alternative to additional clean-up may be to fill in the hole and place a statement on the facility deed indicating the contamination location and extent, so that when/if the facility is decommissioned, clean-up could be done at that time. The alternative was discussed with Mr. Trump of the RHP following the inspection.

18. EXIT INTERVIEW: An exit interview was held on April 30, 1991 with Messrs. Ransohoff, Schwoerer, and Costley present. The violations were discussed and statements that a letter would follow were made. Also discussed were the inspector's concerns regarding continued elevated dose rates in unrestricted areas. The ongoing violation was not cited due to NPI's recent (4/4/91) response to that problem.

REM/dpw
Attachments

uncovered drum evaporates, the cobalt-60 concentration becomes higher. As the volume of the water in the drum becomes lower, due to evaporation, NPI personnel add more mop water to the drum. NPI has no plans to dispose of this contaminated water.

- Cathy Bupp and Dave Baker conduct monthly surveys of floors in unrestricted areas using an Eberline 600. No contamination has been found during the year of 2000 and year to date 2001.
- Dose rates behind the hot cell range from 25 to over 200 mR/hr.

- One Kilometer Survey Results

22175 Dickerson School Road	04/26/2001	No Contamination Found
20120 Mouth of Monocacy Road	03/30/2001	No Contamination Found
22341 Mt. Ephraim Road	02/26/2001	No Contamination Found
21375 Martinsburg Road	01/29/2001	No Contamination Found
19700 Barnesville Road	12/26/2000	No Contamination Found
21821 Big Woods Road	11/02/2000	0.4 uCi Co-60 in 10 gal. soil
Rachel Property	10/27/2000	No Contamination Found
21700 Big Woods Road	09/29/2000	No Contamination Found

- On 10/11/2000, Helguson Scientific Services Inc. (925-846-3453) conducted whole body Counting on 16 of NPI's LAA employees at the Barnesville Fire Department. 4 employees tested positive for Cobalt-60. Results ranged from 3 -10 (+ or - 1) nanocuries.
- NPI received 187,526 curies cobalt-60 from Empresa, Argentina on 2/22/01.
- Sealed source shipment records were inspected and reviewed and customers' licenses were spot-checked. No deficiencies were found.
- Monthly Health Physics Reports are prepared by R.E. Alexander, CHP. On page 4, section 4.2 of the May 2001 report, Mr. Alexander states that NPI now conducts one of the best contamination control programs that he has ever seen.
- Mr. Alexander conducts quarterly training for employees who work in the LAA. On March 30, 2001 provided LAA employees with a course on "Time, Distance and Shielding". During the fourth quarter of 2000, the subject was "Occupational Radiation Protection Regulatory Controls and 12 employees attended.
- Three LAA workers received 1.87, 2.00 and 2.88 Rem TEDE for the year of 2000.
- Historic Waste Disposal Records were reviewed

02/16/98	100 cu. ft.	36 millicuries
09/05/96	1280 cu. ft.	100 millicuries
12/19/90	78.3 cu. ft.	
05/21/90	62.7 cu. ft.	0.99 curies
07/21/88	65.4 cu. ft.	0.99 curies
- On June 21, 2000, Bob Nelson assisted an inspector from the Maryland Occupational Safety and Health Administration (MOSH) in conducting a safety inspection of NPI's LAA. The MOSH Inspector identified numerous violations including the construction of a temporary makeshift scaffold on top of the 20-foot high moveable crane where an 8 foot step ladder was used to change burned out light bulbs in the LAA near the main pool. Other violations and concerns included exposed belts on the drill press, no safety guards on the lathe, uncovered electrical boxes, lack of a railing around the main pool, stairs without handrails, inadequate eye protection and blocked fire exits. MOSH issued a proposed penalty of \$3825.00. On 9/22/200, an informal settlement agreement was signed and on 10/13/2000, NPI paid a \$1450.00 penalty.

SUMMARY OF ONE KILOMETER SURVEYS

MAY 20, 1992

STATE'S
EXHIBIT

48

ONE KILOMETER SURVEY INFORMATION

1. Date of contact and date of survey are approx. the same.
2. Method of contact: Personal visit by Bernard Boswell and delivery of letter during visit.
3. All letters delivered were the same. An example is included in this summary.

DEFINITIONS:

Type II survey - Ludlum 177 with 1" scintillation probe used close to ground.

✓ Bichon survey - Bichon Micro Rem LE used at one meter above ground.

DATE OF TYPE OF
SURVEY / PROPERTY / CONTACTED / SURVEY / RESULTS

9/21/90	YES	II	FIVE SPOTS: SEE NOTE 1 ✓
11/9/90	YES	II	NO ACTIVITY ABOVE BKGD.
11/15/90	YES	II	" " " "
11/16/90	YES	II	" " " "
11/18/90	YES	II	" " " "
12/18/90	YES	II	" " " "
12/27/90	N/A	II	" " " "
12/31/90	NO	II	TWO SPOTS: SEE NOTE 2 ✓
1/22/91	YES	II	FOUR SPOTS: SEE NOTE 3 ✓
1/26/91	N/A	II	NO ACTIVITY ABOVE BKGD.
1/30/91	YES	II	ONE SPOT: SEE NOTE 4
2/4/91	YES	II	NO ACTIVITY ABOVE BKGD.
2/13/91	YES	II	" " " "
2/14/91	YES	II	SIX SPOTS: SEE NOTE 5 ✓
2/26/91	YES	II	NO ACTIVITY ABOVE BKGD.
3/12/91	YES	II	" " " "
3/26/91	YES	II	TWO SPOTS: SEE NOTE 6 ✓
3/29/91	YES	II	ONE SPOT: SEE NOTE 7 ✓
4/30/91	YES	II	NO ACTIVITY ABOVE BKGD.
4/30/91	YES	II	NO ACTIVITY ABOVE BKGD.

EXPLANATION OF NOTES

NOTE	PROPERTY	NO. SPOTS	RANGE OF ACTIVITY(uci)	TOTAL ACTIVITY(uci)	
1		5	<.1 - .302	.45 (approx.)	
2		2	<.1	.10	"
3		4	<.1 - .95	1.60	"
4		1	<.1	.05	"
5		6	<.1 - .2	.60	"
6		2	.29 - .84	1.13	"
7		1	.378	.378	"
8		3	.034 - .144	.265	"
9		1	.229	.229	"
10		16	<.1 - .859	3.60	"
11		1	1.69	1.69	"
12		1	.2	.20	"
13		6	.39 - 2.6 ✓	7.10	"
		49	<.1 - 2.6	17.392	"

MEMO- Accident Incident File**FROM- Ray Manley****REGARDING- Investigation and limited inspection of NPI regarding the uncontrolled release of a fifty microcurie cobalt-60 particle into the Dickerson community**

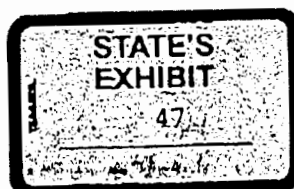
On June 22, 1992, at 1300 hours this writer telephoned Mr. Ransohoff, President of NPI, pursuant to an earlier telecon, on June 22, 1992, in which he requested the Agency to call NPI. He stated that he wished to report to the Agency that NPI had identified a RAM particle (probably cobalt-60) in the Dickerson neighborhood while conducting routine environmental surveys. He stated the following:

1. The particle was found on a neighborhood property (he did not at present know the name of the owner, address, or persons renting the property) approximately 400 to 500 feet East and downwind of the facility, on 6/18/92 or 6/19/92, by Bernie Boswell during a routine NPI survey.
2. The activity of the particle has been estimated by NPI using emissivity dose rates as being 50 microcuries. The dose rate using a Bicon microRem meter at one meter was determined to be 60 microRem. (Mr. Ransohoff stated other dose rates had been taken, but he was not familiar with the results)
3. The RAM was determined to be on the surface and in a very discrete size. NPI has removed the particle and put it in the LAA, where it has been broken up into three small particles. Each particle is too hot to be counted by the NPI counting system.
4. Mr. Ransohoff stated that this residential property was presently for sale, and that it was his understanding that previous to the NPI survey the realtor had called RHP (Carl E. Trump, JR.) and the NRC (Frank Costello) to discuss the danger of persons living in the NPI vicinity. Mr. Ransohoff stated that he has spoken to the realtor since the particle was found and relayed the results of the survey. He stated that the owner of the property and those persons presently living on the property were unaware of the survey results.
5. A preliminary report is to be sent to RHP by the end of 6/22/92.
6. NPI has completed the survey of the 7 acre property with no other RAM found.
7. The property has never been surveyed by NPI before because of the inability of NPI to contact the resident/owners for permission.

I informed Mr. Ransohoff that the Agency would investigate the matter.

On June 23, NPI faxed their report of the occurrence to the Agency (attached).

On June 24, 1992 Messrs. Alan Jacobson, Bob Nelson and myself visited the NPI facility to conduct an investigation. The following NPI personnel were interviewed.



1. Mr. Jackson Ransohoff-President
2. Mr. Wayne Costley-Radiation Safety Officer of the -01 license
3. Mr. Bernie Boswell-NPI employee conducting one kilometer neighborhood surveys

NPI Actions Taken to Date:

1. Removal of the RAM to the Limited Access Area of NPI
2. Evaluation by dose rate of estimated activity
3. The breaking down of the sample into three discrete particles
4. A complete survey of the resident property
5. Survey of properties adjoining NPI and in line with the location of the found particle
6. Comparisons to the locations of previously discovered particles indicated that the RAM was in the general direction of prevailing winds.

NPI Proposed Additional Actions:

1. Analysis to confirm identity of the radionuclide
2. Analysis of chemical makeup of particle
3. Investigation of the possibility that the particle was a deliberate plant to discredit NPI
4. The hiring of a micromeritic expert(small particle dispersion)

Particle Location:

approximately 100 feet from residence

Residents- (renting property) not present during Agency survey

Owner-

Listing Agent- Long & Foster

Coop Realtor-

Agency Surveys:

Location-

MD

Date of Survey-June 24, 1992

The house is being listed for sale by Long and Foster and contact for the coop realtor handling the property is

Mr. contacted by this writer on the morning of June 24, 1992 in order to gain permission to survey the property. He stated that he had contacted the listing agent and the residents and access was approved.

An inspection and survey of the location where the particle was found and removed(indicated residual contamination.(see photo) Mr. Boswell stated that he had not completed the cleanup of the area. A soil sample was removed for state laboratory

analysis.(see photo #3) The following surveys of the property and the surrounding Dickerson community were conducted.

Persons Conducting Survey:Alan Jacobson, Bob Nelson, Ray Manley

Instrumentation Used:

- 1.Eberline PRM-6, S/N 4921, with Spa-3 scintillation detector
- 2.Eberline PRM-6, S/N 1049, with Spa-3 scintillation detector
- 3.Bicron Micro/R meter, S/N A 2795

Survey Methodology:

- 1.Wooded areas were not surveyed.
- 2.A traverse of grassy areas on the property was made with the micro/R meter at one meter above the ground.(background 10 u/R hour)
- 3.A traverse of grassy areas on the property was made with the scintillation detectors at ground level.(background 25000 counts per minute)
- 4.A soil sample was removed from the spot where the radioactive material was discovered by NPI.
- 5.A soil sample was randomly removed from the property away from the spot where the radioactive material was discovered by NPI.

Survey Results:

- 1.All traverse surveys with the micro/R meter indicated background radiation levels.
- 2.Contact micro Rem dose rate with remaining soil after sample removal from spot where radioactive material was discovered by NPI, was 30 micro/R per hour.
- 3.Soil sample results(attached)

a.soil concentration from particle location-4.42 +/- x 10 E-6 microcuries per gram(cobalt-60)

b.soil concentration from random location-1 x E-8 microcuries per gram(cobalt-60)

Additional Surveys:

Additional surveys with the above instrumentation was taken on the Ray property field which is located between the property and the NPI facility. One spot of radioactive contamination was identified and removed by Mr. Boswell. NPI analysis of the radioactive material indicated that it was approximately 1.4 microcuries.(see photo for location)

Surveys were conducted on the property and indicated one spot of contamination.(see photo). Mr. Boswell stated that this was radioactivity remaining from a spot that NPI had previously identified. Mr. Boswell stated that he would remove the remaining activity. Mr. was informed of the results of the Agency's surveys.

An exit interview was held with Messrs. Ransohoff, Costley, and Boswell following the survey. Mr. Ransohoff stated that NPI was not a 0 release facility. However, he could not define the route and dynamics on how a particle of cobalt-60 of this activity was being released from NPI. He stated that NPI would continue to conduct the required surveys in the surrounding neighborhood.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103

Office of Regional Counsel

Charles B. Howland
(215) 814-2645
FAX: (215) 814-2603
Email: howland.charles@epamail.epa.gov

April 12, 2004

Jackson A. Ransohoff
President
Neutron Products, Inc.
22301 Mt. Ephraim Rd.
P.O. Box 68
Dickerson, MD 20842

Re: Request for Information under Freedom of Information Act

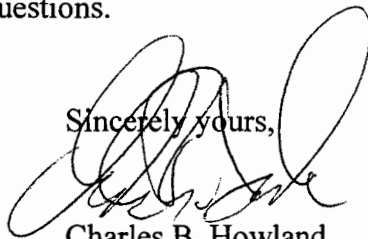
Dear Mr. Ransohoff:

Following up on our previous conversations, most recently this past Friday, I wanted to confirm that EPA has received a request from the Maryland Department of the Environment ("Department"), under the Freedom of Information Act ("FOIA"), seeking a copy of the August 8, 2003 (as amended August 15, 2003) response of Neutron Products, Inc. ("NPI") to EPA's June 26, 2003 *Required Submission of Information* regarding NPI's operations. NPI asserted that much of its response should be considered "confidential" by EPA. After discussions with NPI, EPA determined that NPI was requesting that its response be treated as potential Confidential Business Information ("CBI") under Section 104(e)(7) of CERCLA, 42 U.S.C. 9604(e)(7), and 40 CFR Part 2.

EPA has not yet determined whether the information provided by NPI qualifies as CBI. However, in past conversations with me you have indicated that NPI would voluntarily provide the Department a copy of its 104(e) response, and indeed that it desired to do so in an effort to resolve disagreements and misunderstandings it has with the Department.

Given the deadlines imposed by FOIA, I wanted to let you know that if you are unable to provide a copy of NPI's 104(e) response to the Department by Thursday, April 15, 2004, EPA will assume that NPI will not provide a copy of the 104(e) response to the Department directly, and EPA will make a final determination as to what portions (if any) of NPI's response qualify as CBI.

Please call me if you have any questions.


Sincerely yours,
Charles B. Howland
Sr. Asst. Regional Counsel

Neutron Products- Results of Soils and Waters from 8/02

Location	pCi/g of Co-60
Fence Inside LAA	297 +- 17
Outside LAA fence line	14.6 +- .83
Under air conditioner	18.6 +- 1.1
Stainless pipe outside LAA	20.9 +- 1.2
Roof Drain W of LAA	14.5 +- .82
Roof Drain W of LAA	14.6 +- .83
Soil under power panel	8.47 +- .48
Stone gravel trap inlet	26.9 +- 1.5
Power pole near dry pond	71.6 +- 4.1
Dry pond west edge of channel	368 +- 21
Dry pond hot particle	35.3 +- 2
RR old siding	11.6 +- .66
8 ft from back fence	ND
1 meter west of NP #12	41 +- 2.3
South power pole- west property line	53.9 +- 3.1
Fence line SW corner	33.7 +- 1.9
Fence line SW corner	34.9 +- 2
5 ft W of fence	11.7 +- .67
RR siding 2 ½ posts E of SW corner	116 +- 6.6
5 Ft E of stop sign	16.9 +- .96
White house lawn	32.7 +- 1.9
Dickerson Conservation Park	ND
Fire Station Bealsville	ND
Culvert Outfall	.15 +- .012
Culvert outfall	.16 +- .015
Culvert inlet	6.6 +- .38
Monocacy Creek sediment	ND
Little Monocacy Creek (water)	ND
Little Monocacy Creek (water)	ND

MT. EPHRAIM ROAD

Polyox

DRY POND
GATE

Sidings
Ditch

Rail Road

Rip Rap

TEL. Rk

16

12

13

14

15

SAMPLES TAKEN @ NEUTRON
PRODUCTS 5/15/2002

TEL. Pole

Near drain by
Dickinson School Rd

TEL. Pole

18

Info that I had written up to help Lorie. Thought it may be helpful to you as well.

Also, I wanted to mention that there are companies, such as URS who can do a pathway analysis for an inadvertent intruder (whether or not someone getting into the facility could cause immanent harm or possibly from a fire. Region II used something similar to start an action on Radium Chemical in NY- they did a pathway analysis for someone who crashed their car into the building.

----- Forwarded by Sheri Minnick/R3/USEPA/US on 08/02/2002 10:24 AM -----

Sheri Minnick

07/11/2002 11:43 AM

To: Dawn Ioven/R3/USEPA/US@EPA, Lorie Baker/R3/USEPA/US@EPA,

KevinJ

Wood/DC/USEPA/US@EPA

cc:

Subject: Neutron Products

Perhaps we can get together on July 24th to discuss risk factors for this site. I have never been through this process before so I am trying to learn my way. This is what I have thus far.

I have found Radionuclide Carcinogenicity slope factors for Co-60 in terms of risk/pCi:

Water Ingestion 1.57 E-11

Food Ingestion 2.23E-11

Soil Ingestion 4.03 E-11

Inhalation 3.58E-11

and also found a document that gives a cancer morbidity of 8E-2 risk per Sievert that relates external dose to risk. 1 Sv=100 rem dose. (Although the document says Superfund should not use it for other than estimates).

To summarize the possible pathways, I made this list:

1) This site is unusual because the biggest pathway is the direct external exposure to members of the public. For example, the residents of the house across the street get 60 millirem per year. {If you take 60 mrem per year for thirty years, you have an increased risk of about 1/1000} I don't know if we've ever used this type of calculation to justify a risk before.

EPA Soil Screening Guidance

- generally, areas of a site which fall below the screening levels may be eliminated from further assessment.
- they are not cleanup standards

Pathway	SSL (Age-adjusted pCi/g of Co-60)
Ingestion of Soil	79
External Exposure	.036
Soil to Ground water	2.4
Inhalation of fugitive dust	2,000,000

Preliminary Remediation Goals

- establishes cleanup levels when ARAR is not available or not sufficiently protective.

Pathway	PRG (pCi/g of Co-60) defaults
Outdoor Worker Soil	.05
Residential soil	0.361
Agricultural soil	9E-4

These numbers can be adjusted to site specifics. For example, based on a site in the climatic zone similar to Philadelphia, and based on 0.5 acres, the residential soil number goes to 0.036 pCi/g and outdoor worker soil goes to 0.0596 pCi/g

ORIGINAL

Sheri Minnick/R3/USEPA/US
07/02/2002 10:46 AM

To Christine Wagner/R3/USEPA/US@EPA, Dennis
Matlock/R3/USEPA/US@EPA, Peter
Gold/R3/USEPA/US@EPA, Tom

cc

bcc

Subject The latest on Neutron Products

FYI

As most of you know, last Thursday, Neutron went to court for the last and final time to get permission to make sources to send to a company named Permagrain in PA since they had a contract with Permagrain to receive up to a certain quantity (I believe 1/2 million curies) of Co-60. Neutron up to this point was still actively seeking new customers for sale of Co-60 sources. Anyway, MDE folks were against them restarting the business since they were the group responsible for getting the license taken away. The court upheld the decision by MDE, and thus Neutron will not be granted permission to start up their -01 license to make sources.

In other related news....

on 6/27, a truck containing a roll off refuse container from Neutron, that was supposed to be non-rad waste, set off the radiation monitor at the Montgomery County Waste Transfer Station in Rockville, MD. The container was searched and a bag containing towels and rags contaminated with Co-60 was found. It read about 0.5 mR/hr. MDE is citing Neutron for improper waste disposal. Note: this information is not available for public disclosure until 7/4/02.

ORIGINAL

Sheri Minnick/R3/USEPA/US

07/11/2002 02:55 PM

To Lorie Baker/R3/USEPA/US@EPA, Christine
Wagner/R3/USEPA/US@EPA, Tom
Stukas/R3/USEPA/US@EPA, pac4@cdc.gov

cc

bcc

Subject Neutron Products current inventory

For the -01 manufacturing license, NP currently has a total of 638,300 Ci of Co-60

Broken down:

Most of this is slugs, sources and stelite that is stored in the main pool.

The remainder is 3180 Ci of rad waste stored in the main pool, 115 Ci of rad waste stored in the north canal and 182 Ci of rad waste (equipment, soil, clothing, etc.) in dry waste storage.

Note: this dry waste storage is what is causing the exposure rates to the public of ~130millirem per year at the portico of the house across the street.

You may, at this point be thinking, how can such a small part of their inventory (182Ci) cause the exposure rates?

Answer: the large quantities are stored with lots of water to shield it. The dry waste storage does not have much shielding. In fact they use the lower level drums as shielding for the hotter stuff. Unshielded, a point source of 182 Ci of Co-60 gives a dose rate of 2602 R/hour at 1 foot (lethal dose is around 300 rads, or about 7 minutes at one foot from this quantity) and about 65 mR/hr at 200 feet away, or 29mR/hr at 300 ft away. The regulatory does limit to members of the public is 100 mrem for the year. Thank God for shielding!